

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit
P0039126	ACI001-VC	1	1	Net 30	M4140H-R1.000	4140 round bar 1.00 : AISI 4140H ROUND BAR PER AISI4140OR ASTM A304-02/-A-434-BC/-A193-03- GRADE B7/-A29-03/-A322-91 OR UNS#-G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI				12	3/7/2018	10		S048645	Stock	3/7/2018	\$ 4.66 / ft
		2			M304B0.500X6.000	304 Bar 0.500 X 6.000" : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft				6		6		S048646	Stock	3/7/2018	\$ 45.49 / ft
		3			M304B0.625X6.000	304 Bar 0.625 X 6.000" : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft						6		S048647	Stock	3/7/2018	\$ 55.63 / ft
		4			M304S11GA	304/316 0.125 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240				96		96		S048648	Stock	3/7/2018	\$ 12.23 / sf
		5			M304S18GA	304/316 .050 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240				64		64		S048649	Stock	3/7/2018	\$ 5.36 / sf
		6			M304S16GA	304/316 Sheet .063 : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf				192		192		S048650	Stock	3/7/2018	\$ 6.51 / sf
		7			M304S20GA	304/316 .040 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf				96		96		S048651	Stock	3/7/2018	\$ 3.91 / sf
		8			M304R5.500	304 SS Round bar 5.500 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft				8		8		S048652	Stock	3/7/2018	\$ 310.63 / ft
		9			M304R0.625	304 SS Round bar 0.625 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft				24		26		S048653	Stock	3/7/2018	\$ 2.66 / ft
		12			MT-A513-T-1.000W0.120	A513 Seamless Alloy Steel Round Tubing 1" dia. x 0.120" Wall				20		23		S048654	Stock	3/7/2018	\$ 2.47 / ft
		13			M6061T6B2.000X01.250	6061 T6 Bar 2.00 X 1.25 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft				12		12		S048655	Stock	3/7/2018	\$ 10.11 / ft

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit
		14			M6061T6B0.750X04.000	6061-T6 Bar .750 X 4.00 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft						12		S048656	Stock	3/7/2018	\$ 10.43 / ft
		16			M304B0.750X2.500	304 Bar .750 X 2.50 : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft				36		36		S048657	Stock	3/7/2018	\$ 25.24 / ft
		17			M6061T6S.050	6061-T6 .050 Sheet : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf				96		96		S048658	Stock	3/7/2018	\$ 3.31 / sf
		18			M6061T6S.250	6061T6 Sheet .250 : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf				32		32		S048659	Stock	3/7/2018	\$ 12.30 / sf
		19	2		M1018R0.375	1010-1025 Round Bar .375 : MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108				12	3/8/2018	12		S048617	Stock	3/7/2018	\$ 0.50 / ft
		20	1		M1018B1.000X1.000	1010-1025 Steel Bar 1.000 X 1.000 : MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A569/A570 OR CSA G40-21 38W/44W/50W/60W/70W CSA G40-21 OR 38W/44W/50W/60W/70W					3/7/2018	12		S048661	Stock	3/7/2018	\$ 3.60 / ft
Total:										736		739					

**ACIER OUELLETTE INC.**

935, Boul. du Hâvre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mt: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mt: 514-336-4246 Ext.: 866-456-4242

**DELIVERY - CLIENT****Copy**

CO00075982

**Billed to**

DART AEROSPACE LTD

1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Customer N°	CLI0001056
Date	2018/02/27
Delivery date	<b>2018/03/06</b>
Your order N°	39126
Processed by	Josianne Bourdon
Salesman	
Carrier	OUELLETTE VALLEYFIELD
Credit Terme	Net 30 Days
Page	1

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only					
				CMD	EXP	B/O	IN	I	S	C	OUT	
1 ROUND 4140 HEAT TREAT 1 (R) * R4140-1H 4919 1 X 10' HEAT: 177569 COUPE A LA SCIE SCIE 1	32.04	12.00	PL_\$CLB		1 X 10'		10'				MAR 07 2018	DAS 3/1 9-20
2 FLAT SS 1/2 X 6 SS304 RANDOM NS FSS-126-V 9086 1 X 6' HEAT: 600J AC13907-SUP-05/03	61.20	6.00	PL_\$CLB		1 X 6'		6'				MAR 07 2018	DAS 3/1 9-20
3 PLATE SS 5/8 SS304 HRAP RANDOM NS PSS-58-V 9133 1 X 6' HEAT: 702625E AC13907-SUP-05/03	160.99	6.00	PL2_\$CLB		1 X 6'		6'				MAR 07 2018	DAS 3/1 9-20

NIR : R-109516-6

Next Page...

**ACIER OUELLETTE INC.**

935, Boul. du Hâvre  
Sablerry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

**DELIVERY - CLIENT**

**Copy** CO00075982

**Billed to**

DART AEROSPACE LTD

1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Instruction** F-M

**Delivery Route** 5

**Customer N°** CLI0001056  
**Date** 2018/02/27  
**Delivery date** 2018/03/06  
**Your order N°** 39126  
**Processed by** Josianne Bourdon  
**Salesman**  
**Carrier** OUELLETTE VALLEYFIELD  
**Credit Terme** Net 30 Days  
**Page** 2

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
4 SHEET SS 11G SS304-2B (4 X 8) FESS-11G483042B 3402 3 X 4' X 8' HEAT: 459P	504.00	96.00	PI2_\$CLB		St		③ 96 P12			MAR 07 2018	9-83
5 SHEET SS 18G SS304-2B (4 X 8) FESS-18G483042B 3425	134.40	64.00	PI2_\$CLB		St		③ 64 P12			MAR 07 2018	9-83
2 X 4' X 8' HEAT: LZ513C03					St		④ 142 P12			MAR 07 2018	9-83
6 SHEET SS 16G SS304-2B (4 X 8) FESS-16G483042B 3419	504.00	192.00	PI2_\$CLB		St		④ 142 P12			MAR 07 2018	9-83
6 X 4' X 8' HEAT: 514212							③ 96 P12				
7 SHEET SS 20G SS304-2B (4 X 8) FESS-20G483042B 3430	150.72	96.00	PI2_\$CLB								
3 X 4' X 8' HEAT: 853274					St					MAR 07 2018	9-83

NIR : R-109516-6

Next Page...

**ACIER OUELLETTE INC.**

935, Boul. du Hâvre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mt: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mt: 514-336-4246 Ext.: 866-456-4242

**DELIVERY - CLIENT****Copy**

C000075982

Customer N°

CL10001056

Date

2018/02/27

Delivery date

2018/03/06

Your order N°

39126

Processed by

Josianne Bourdon

Salesman

Carrier

OUELLETTE VALLEYFIELD

Credit Terme

Net 30 Days

**Shipped to**

DART AEROSPACE LTD  
1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Instruction** F-M**Delivery Route** 5

Page

3

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
8 ROUND SS 5 1/2 304 NS RSS-512 10145 1 X 8" HEAT: 41257 ACI3908-MM-28/02	646.24	8.00	PI_\$CLB		18		8				DAS 2/1 9:00 MAR 07 2018
9 ROUND SS 5/8 304 (R) * RSS-58 5777	25.03	24.00	PI_\$CLB		29		26				DAS 2/1 9:00 MAR 07 2018
2 X 12' R/L HEAT: 439067					14		?				
10 TUBE MEC 0.625 OD X .095 (R) * TME-0625095 6763	10.76	20.00	PI_\$CPI		24						
1 X 20' R/L HEAT: 15D2317											
TRANSIT ST-JEROME LE 28/02											

NIR : R-109516-6

Next Page...



## DELIVERY - CLIENT

Copy

CO00075982

### ACIER OUELLETTE INC.

935, Boul. du Hève  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°

CL10001056

Date

2018/02/27

Delivery date

2018/03/06

Your order N°

39126

Processed by

Josianne Bourdon

Salesman

Carrier

OUELLETTE VALLEYFIELD

Credit Terme

Net 30 Days

### Shipped to

DART AEROSPACE LTD  
1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Page

4

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
12 TUBE MEC 0.750 OD X .095 (R) * TME-0750095 8163 1 X 20' R/L HEAT: 1502800 TRANSIT ST-JEROME LE 28/02	13.30	20.00	PL_\$CPI		14 236		7				
14 TUBE MEC 1.000 OD X .120 (R) * TME-1000120 6505 1 X 20' R/L HEAT: D37954	22.56	20.00	PL_\$CPI		11/28x1		23				MAR 07 2018
15 FLAT ALU 1 1/4 X 2 6061-T6 * FAL-1142 2456 1 X 12' HEAT: 385790	35.28	12.00	PL_\$CLB		9/1x1		12				MAR 07 2018

NIR : R-109516-6

Next Page...



## DELIVERY - CLIENT

Copy

CO00075982

### ACIER OUELLETTE INC.

935, Boul. du Hâvre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°

CL10001056

Date

2018/02/27

Delivery date

2018/03/06

Your order N°

39126

### Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

### Shipped to

, Ontario,

Processed by

Josianne Bourdon

Salesman

Carrier

OUELLETTE VALLEYFIELD

Credit Terme

Net 30 Days

Instruction F-M

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Page

5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only					
				CMD	EXP	B/O	IN	I	S	C	OUT	
16 FLAT ALU 3/4 X 4 6061-T6 * FAL-344 2596 1 X 12' HEAT: 70740	42.29	12.00	PI_\$CLB				12'				MAR 07 2018	
17 FLAT SS 3/4 X 2 1/2 SS304 RANDOM NS FSS-34212-V 8747 3 X 12' R/L HEAT: 26600 AC13997-MM-05-03	229.50	36.00	PI_\$CLB				36'				MAR 07 2018	
18 ALU SHEET .051 (16G) 6061-T6 (4 X 12) FEAL-0514126061 3145 2 X 4' X 12' HEAT: 32115/01 TRANSIT ST-JEROME LE 28/02	68.93	96.00	PI2_\$CLB				96' Piz				MAR 07 2018	

NIR : R-109516-6

Next Page...





# DELIVERY - CLIENT

Copy

CO00075982

ACIER OUELLETTE INC.

935, Boul. du Hâvre  
Sablerry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°

CL10001056

Date

2018/02/27

Delivery date

2018/03/06

Your order N°

39126

Processed by

Josianne Bourdon

Salesman

Carrier

OUELLETTE VALLEYFIELD

Credit Terme

Net 30 Days

Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.

HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att: CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Page

6

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	C
20 ALU PLATE 1/4 6061-T651 (4 X 8) PAL-14486061 4242 1 X 4' X 8' HEAT: 16-39426053	117.12	32.00	PL2_\$CLB				32			
21 ROUND CR 3/8 1018 (R) * RCR-38 5337 1 X 12' R/L HEAT: 41776 GM	4.51	12.00	PL_\$CLB				12			
22 SQUARE CR 1 1018 (R) * CCR-1 1813 1 X 12' R/L HEAT: 41198 G	40.80	12.00	PL_\$CLB				12			

Total Weight (lbs) : 2 803.67

NIR : R-109516-6

Conditions :  
All sold and delivered materials remain the property of "Acier Ouellette Inc." until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Prepared By :

Verified By :

Delivered By :

Time

Customer's Signature

Date

Total (\$CAD)





Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER PO039126

**Supplier:** ACI001-VC  
Acier Ouellette Inc.  
935 Boul. Du Havre  
Valleyfield  
QC  
J6S 5L1 Canada  
Phone: 800 667 4248  
Fax: 450 377 5696

**PO No:** PO039126

**PO Date:** 2/26/18

**Due Date:** 3/2/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
clavoie@dartaero.com

**E-MAILED**

**FEB 27 2018**

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**Via:** Ground

**Pynt Terms:** Net 30

**Freight Terms:**

**Special Comments:** quotation no: sou0087982

## Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	M4140H-R1.000		4140 round bar 1.00 : AISI 4140H ROUND BAR PER AISI4140OR ASTM A304-02/-A-434- BC/-A193-03-GRADE B7/- A29-03/-A322-91 OR UNS#-G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI	Firmed	3/2/18	12 ft	10' 0 ft	12 ft	\$4.664/ft	\$55.97
2	M304B0.500X6.000		304 Bar 0.500 X 6.000" : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	6 ft	6' 0 ft	6 ft	\$45.48666/ft	\$272.92
3	M304B0.625X6.000		304 Bar 0.625 X 6.000" : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	6 ft	6' 0 ft	6 ft	\$55.83333/ft	\$335.00
4	M304S11GA		304/316 0.125 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240	Firmed	3/2/18	96 sf	96' 0 sf	96 sf	\$12.2298/sf	\$1,174.06

Plex 2/26/18 2:10 PM dart.lavoie.chantal

## PURCHASE ORDER

PURCHASE ORDER										
Line Item	Part	Supplier Part No	Items							
			Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
5	M304S18GA		304/316 .050 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240	Firmed	3/2/18	64 sf	0 sf	64 sf	\$5.355/sf	\$342.72
							64		MAR 07 2018	DAS 11 9-89
6	M304S16GA		304/316 Sheet .063 : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf	Firmed	3/2/18	192 sf	0 sf	192 sf	\$6.508625/sf	\$1,249.66
							192		MAR 07 2018	DAS 11 9-89
7	M304S20GA		304/316 .040 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf	Firmed	3/2/18	96 sf	0 sf	96 sf	\$3.9085416/sf	\$375.22
							96		MAR 07 2018	DAS 11 9-89
8	M304R5.500		304 SS Round bar 5.500 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	8 ft	0 ft	8 ft	\$310.625/ft	\$2,485.00
							8		MAR 07 2018	DAS 11 9-89
9	M304R0.625		304 SS Round bar 0.625 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	24 ft	0 ft	24 ft	\$2.6591666/ft	\$63.82
							26		MAR 07 2018	DAS 11 9-89
10	MT-A513-T-0.625W0.095		A513 Seamless Alloy Steel Round Tubing 0.625"dia. x 0.095" Wall	Firmed	3/2/18	20 ft	0 ft	20 ft	\$2.9595/ft	\$59.19
11	MT-A513-T-0.750W0.095		A513 Seamless Alloy Steel Round Tubing 0.75"dia. x 0.095" Wall	Firmed	3/2/18	20 ft	0 ft	20 ft	\$2.4095/ft	\$48.19
12	MT-A513-T-1.000W0.120		A513 Seamless Alloy Steel Round Tubing 1"dia. x 0.120" Wall	Firmed	3/2/18	20 ft	0 ft	20 ft	\$2.4695/ft	\$49.39
							23		MAR 07 2018	DAS 11 9-89
13	M6061T6B2.000X01.250		6061-T6 Bar 2.00 X 1.25 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	3/2/18	12 ft	0 ft	12 ft	\$10.1125/ft	\$121.35
							12		MAR 07 2018	DAS 11 9-89

## PURCHASE ORDER

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
19	M1018R0.375		1010-1025 Round Bar .375 : MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108	Forecast	3/7/18	12 ft	0 ft	12 ft	\$0.4958333/ft	\$5.95
						Firmed	3/8/18	12 ft	0 ft	12 ft \$0.4958333/ft
						Sub Total:	24	0	24	\$11.90
Grand Total:										\$370.61

## Order Notes

## Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Plex 3/7/18 1:43 PM dart.lavoie.chantal

## PURCHASE ORDER

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
14	M6061T6B0.750X04.000		6061-T6 Bar .750 X 4.00 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	3/2/18	12 ft	0 ft	12 ft	\$10.429166/ft	\$125.15
15	M6061T6B1.000X1.750		6061T6 Bar 1.000 X 1.750 : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	3/2/18	12 ft	0 ft	12 ft	\$20.166666/ft	\$242.00
16	M304B0.750X2.500		304 Bar .750 X 2.50 : MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE AS PER ASTM A276 OR ASTM A240 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	3/2/18	36 ft	0 ft	36 ft	\$25.241944/ft	\$908.71
17	M6061T6S.050		6061-T6 .050 Sheet : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf	Firmed	3/2/18	96 sf	0 sf	96 sf	\$3.3095833/sf	\$317.72
18	M6061T6S.250		6061T6 Sheet .250 : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf	Firmed	3/2/18	32 sf	0 sf	32 sf	\$9.92875/sf	\$317.72
19	<del>M1018R0.313</del>		1018-1025 Round Bar .313 : MATERIAL: AISI 1018-1025 ROUND BAR M1010S20GA AS PER MIL-S-7097 OR ASTM A108 receive ft	Firmed	3/2/18	12 ft	0 ft	12 ft	\$0.4958333/ft	\$5.95
20	M1018B1.000X1.000		1010-1025 Steel Bar 1.000 X 1.000 : MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A569/A570 OR OR CSA G40-21 38W/44W/50W/60W/70W CSA G40-21 OR 38W/44W/50W/60W/70W	Firmed	3/2/18	12 ft	0 ft	12 ft	\$3.6025/ft	\$43.23

*cy*  
MAR 07 2018  
*deleted part*

*# for m1018R0.375*

## PURCHASE ORDER

Items										
Line- Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
										<b>Grand Total: \$8,592.96</b>
<p align="center"><b>Order Notes</b></p> <p>Procurement Quality Clauses</p> <p>A005 right of entry</p> <p>A012 chemical and physical test report</p> <p>A016 personnel qualification</p> <p>A017 raw material identification (as applicable)</p> <p>A026 certification of material conformance</p> <p>A041 quality management system</p> <p>A042 dart notification by supplier</p> <p>A043 retention of quality documents</p> <p>A048 counterfeit parts avoidance, detection, mitigation and disposition program</p> <p>A049 supplier awareness</p> <p>Terms &amp; Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit <a href="http://www.dartaerospace.com">www.dartaerospace.com</a> for further explanation.</p>										

Plex 2/26/18 2:10 PM dart.lavoie.chantal

**ACIER OUELLETTE INC.**

935, Boul. du H vre  
Salaberry de Valleyfield (Qu bec) J6S 5L1  
T l.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

**Quotation****SOU0087982****Billed to**

DART AEROSPACE LTD  
1270 , ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE T l.: 613-632-5200

**Customer N ** CLI0001056  
**Date** 2018/02/22  
**Revision N ** 0  
**Prices valid until** 2018/03/01  
**Your Order N **  
**Processed by** Josianne Bourdon  
**Salesman** JOSIANNE  
**Carrier** OUELLE SDV  
**Credit Terms** Net 30 Days  
**Page** 4

Product N� and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
<del>FLAT ALU 1 X 2 6061-T6 *</del> <del>FAL-12 2497</del> <del>1 X 20' STOCK</del>	48.00	20.00	PI_\$CLB	20.00	PI		1.00	149.260	149.26
ALU PLATE 1 6061-T651 RANDOM PAL-16061-V 4249 1 X 15" X 144" 4-5 DAYS	216.60	15.00	PI2_\$CLB	15.00	PI2		1.00	1 052.570	1 052.57
ALU PLATE 1 6061-T651 RANDOM PAL-16061-V 4249 1 X 16" X 144" 4-5 DAYS	231.04	16.00	PI2_\$CLB	16.00	PI2		1.00	1 122.740	1 122.74
<del>FLAT ALU 3/4 X 6 6061-T6 *</del> <del>FAL-346 2601</del> <del>1 X 12' STOCK</del>	63.44	12.00	PI_\$CLB	12.00	PI		1.00	218.850	218.85
<del>FLAT ALU 1 1/4 X 2 6061-T6 *</del> <del>FAL-1142 2456</del> <del>1 X 12' STOCK</del>	35.28	12.00	PI_\$CLB	12.00	PI		1.00	121.350	121.35
ALU SHEET .051 (16G) 6061-T6 (4 X 12) FEAL-0514126061 3145 2 X 4' X 12' 2-3 DAYS	68.93	96.00	PI2_\$CLB	2.00	UN		2.00	158.860	317.72
ALU PLATE 1/4 6061-T651 (4 X 8) PAL-14486061 4242 1 X 4' X 8' STOCK	117.12	32.00	PI2_\$CLB	1.00	UN		1.00	393.460	393.46
<del>ALU SHEET .081 (12G) 6061-T6 (4 X 12)</del> <del>FEAL-0814126061 3195</del> <del>2 X 4' X 12' 2-3 DAYS</del>	109.54	96.00	PI2_\$CLB	2.00	UN		2.00	252.455	504.91
ALU PLATE 5/16 6061-T651 (4 X 12) PAL-5164126061 4289 1 X 4' X 12' 2-3 DAYS 3125	216.96	48.00	PI2_\$CLB	1.00	UN		1.00	974.040	974.04
ROUND CR 3/8 1018 (R) * RCR-38 5337 1 X 12' R/L STOCK	4.51	12.00	PI_\$CLB	12.00	PI		1.00	5.950	5.95

Date :

Next Page...

**ACIER OUELLETTE INC.**

935, Boul. du H vre  
Salaberry de Valleyfield (Qu bec) J6S 5L1  
T l.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

**Quotation****SOU0087982****Billed to**

DART AEROSPACE LTD  
1270 , ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

**Customer N **

CLI0001056

**Date**

2018/02/22

**Revision N **

0

**Prices valid until**

2018/03/01

**Your Order N ****Processed by**

Josianne Bourdon

**Salesman**

JOSIANNE

**Carrier**

OUELLE SDV

**Credit Terms**

Net 30 Days

**Page**

5

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE T l.: 613-632-5200

Product N� and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
SQUARE CR 1 1018 (R) * CCR-1 1813 1 X 12' R/L STOCK	40.80	12.00	PI_\$CLB	12.00	PI		1.00	43.230	43.23
FLAT 17-4 PH H900 1/4 X 4 N 4 X 12' 2 MONTH OFFER SOL ANN A564 HRAP	0.00	4.00	UN	4.00	UN		4.00	296.000	1 184.00
ROND 17-4 H1150 1 3/4" DIA N 1 X 12' R/L 2-3 WEEKS	0.00	1.00	UN	1.00	UN		1.00	612.000	612.00
ROND 17-4 H1150 2 3/4" N 1 X 12' R/L 2-3 WEEKS	0.00	1.00	UN	1.00	UN		1.00	1 476.000	1 476.00
ROUND SS 3/4 303 (R) * RSS-34303 5761 8 X 12' R/L STOCK	144.19	96.00	PI_\$CLB	96.00	PI		8.00	58.208	465.67
FLAT-Q1 1/4 X 3/8 N 4 X 3'	0.00	4.00	UN	4.00	UN	0.00	4.00		0.00
FLAT ALU 3/4 X 6 6061-T6 * FAL-346 2601 1 X 12' STOCK	63.44	12.00	PI_\$CLB	12.00	PI		1.00	218.850	218.85
SURCHARGE ENERGETIQUE FRAIS_ENERGETIQUE			\$						3.95

**Total Weight (Lbs)** 3 842.11**Important**

This offer is based on availability and current pricing conditions that may be revised upon reception of the order.

This offer is subject and conditional to credit approval.

Approved and Accepted by : \_\_\_\_\_

Date : \_\_\_\_\_ **Total (\$CAD)** 22 814.76

**Sub-total** 20 190.05

TVH-13 \* 2624.71



**ACIER OUELLETTE INC.**

935, Boul. du H vre

Salaberry de Valleyfield (Qu bec) J6S 5L1

T l.: 450-377-4248 M l: 514-336-4248 Ext.: 800-667-4248

Fax: 450-377-5696 M l: 514-336-4246 Ext.: 866-456-4242

**Quotation**

SOU0087982

**Billed to**

DART AEROSPACE LTD

1270 , ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7**Customer N **

CLI0001056

**Date**

2018/02/22

**Revision N **

0

**Prices valid until**

2018/03/01

**Your Order N ****Processed by**

Josianne Bourdon

**Salesman**

JOSIANNE

**Carrier**

OUELLE SDV

**Credit Terms**

Net 30 Days

**Page**

1

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE T l.: 613-632-5200

Product N� and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
PLAT 4140 1" X 1 1/4 HT N 1 X 6' 7-10 DAYS	0.00	1.00	UN	1.00	UN		1.00	140.000	140.00
PLAT 4140 1 1/4" X 1 1/2" HT N 1 X 6' 7-10 DAYS	0.00	1.00	UN	1.00	UN		1.00	180.000	180.00
PLAT 4140 1 1/2" X 2" HT N 1 X 6' 7-10 DAYS	0.00	1.00	UN	1.00	UN		1.00	237.000	237.00
ROUND 4140 HEAT TREAT 1 (R) * R4140-1H 4919 1 X 10' STOCK COUPE A LA SCIE SCIE 1	26.70	10.00	PI_\$CLB	10.00	PI		1.00	46.640	46.64
HEXAGONE AL. 2024-T4 5/16" N 1 X 12' 2-3 DAYS	0.00	1.00	UN	1.00	UN		1.00	65.000	65.00
FLAT SS 1/2 X 6 SS304 RANDOM NS FSS-126-V 9086 1 X 6' 2-3 DAYS	61.20	6.00	PI_\$CLB	6.00	PI		1.00	272.920	272.92
PLAT SS304 5/8 X 6 N 1 X 6' 2-3 DAYS	0.00	1.00	UN	1.00	UN		1.00	335.000	335.00
FLAT SS 3/4 X 2 1/2 SS304 RANDOM NS FSS-34212-V 8747 3 X 12' R/L 2-3 DAYS	229.50	36.00	PI_\$CLB	36.00	UN_\$UN		3.00	302.903	908.71
FLAT SS 3/4 X 1 1/2 SS304 NS FSS-34112 9547 1 X 6' 2-3 DAYS	22.98	6.00	PI_\$CLB	6.00	UN_\$UN		1.00	192.100	192.10

Date :

Next Page...

**ACIER OUELLETTE INC.**

935, Boul. du Havre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

**Quotation****SOU0087982****Billed to**

DART AEROSPACE LTD

1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

**Customer N°**

CLI0001056

**Date**

2018/02/22

**Revision N°**

0

**Prices valid until**

2018/03/01

**Your Order N°****Processed by**

Josianne Bourdon

**Salesman**

JOSIANNE

**Carrier**

OUELLE SDV

**Credit Terms**

Net 30 Days

**Page**

2

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Product N° and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
SHEET SS 11G SS304-2B (4 X 8) FESS-11G483042B 3402 3 X 4' X 8' STOCK	504.00	96.00	PI2_\$CLB	3.00	UN		3.00	391.356	1 174.07
SHEET SS 18G SS304-2B (4 X 8) FESS-18G483042B 3425 2 X 4' X 8' STOCK	134.40	64.00	PI2_\$CLB	2.00	UN		2.00	171.360	342.72
SHEET SS 16G SS304-2B (4 X 8) FESS-16G483042B 3419 6 X 4' X 8' STOCK	504.00	192.00	PI2_\$CLB	6.00	UN		6.00	208.278	1 249.67
SHEET SS 20G SS304-2B (4 X 8) FESS-20G483042B 3430 3 X 4' X 8' STOCK	150.72	96.00	PI2_\$CLB	3.00	UN		3.00	125.073	375.22
ROND SS304 5 1/2" DIA N 1 X 8' 2-3 DAYS	0.00	1.00	UN	1.00	UN		1.00	2 485.000	2 485.00
ROUND SS 5/8 304 (R) * RSS-58 5777 2 X 12' R/L STOCK	25.03	24.00	PI_\$CLB	24.00	PI		2.00	31.910	63.82
TUBE MEC 0.625 OD X .095 (R) * TME-0625095 6763 1 X 20' R/L 2-3 DAYS	10.76	20.00	PI_\$CPI	20.00	PI		1.00	59.190	59.19
TUBE MEC 0.750 OD X .095 (R) * TME-0750095 8163 1 X 20' R/L 2-3 DAYS	13.30	20.00	PI_\$CPI	20.00	PI		1.00	48.190	48.19
TUBE-MECH.-0.75 X .083 (R) N 1 X 20' R/L 2-3 DAYS	0.00	1.00	UN	1.00	UN		1.00	69.000	69.00
TUBE MEC 1.000 OD X .120 (R) * TME-1000120 6505 1 X 20' R/L STOCK	22.56	20.00	PI_\$CPI	20.00	PI		1.00	49.390	49.39

Date :

Next Page...

**ACIER OUELLETTE INC.**

935, Boul. du Havre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

**Quotation****SOU0087982****Billed to**

DART AEROSPACE LTD  
1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

**Customer N°**

CLI0001056

**Date**

2018/02/22

**Revision N°**

0

**Prices valid until**

2018/03/01

**Your Order N°****Processed by**

Josianne Bourdon

**Salesman**

JOSIANNE

**Carrier**

OUELLE SDV

**Credit Terms**

Net 30 Days

**Page**

3

**Shipped to**

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Product N° and description	Weight	Qty	U/M	Qty	U/M	Price	Pcs Nb	Price	Amount
ROUND 4140 HEAT TREAT 1 (R) * R4140-1H 4919 1 X 20' R/L STOCK	53.40	20.00	PI_\$CLB	20.00	PI		1.00	83.280	83.28 4.164
FLAT ALU 1/2 X 12 6061-T6 * FAL-1212 7447 2 X 12' STOCK	169.39	24.00	PI_\$CLB	24.00	PI		2.00	276.065	552.13 23.005
FLAT ALU 1/2 X 5 6061-T6 * FAL-125 2492 2 X 12' STOCK	70.58	24.00	PI_\$CLB	24.00	PI		2.00	116.445	232.89 9.70375
FLAT ALU 3/4 X 4 6061-T6 * FAL-344 2596 1 X 12' STOCK	42.29	12.00	PI_\$CLB	12.00	PI		1.00	125.150	125.15 10.42164
SQUARE ALU 1 6061-T6 * CAL-1 1781 2 X 12' STOCK	28.22	24.00	PI_\$CLB	24.00	PI		2.00	38.940	77.88 13.245
AL. PLAT 1" X 1 3/4" N 1 X 12' 4-7 DAYS	0.00	1.00	UN	1.00	UN		1.00	242.000	242.00
FLAT ALU 1 X 2 6061-T6 * FAL-12 2497 2 X 20' STOCK	96.00	40.00	PI_\$CLB	40.00	PI		2.00	149.255	298.51 7.46275
FLAT ALU 1 1/2 X 2 1/2 6061-T6 * FAL-112212 2439 5 X 12' STOCK	264.36	60.00	PI_\$CLB	60.00	PI		5.00	172.336	861.68 4.36133
CARRE AL. 2 1/4" 6061T6 N 1 X 12' 4-7 DAYS	0.00	1.00	UN	1.00	UN		1.00	386.000	386.00 32.4666
FLAT ALU 1 1/2 X 2 1/2 6061-T6 * FAL-112212 2439 1 X 12' STOCK	52.87	12.00	PI_\$CLB	12.00	PI		1.00	172.340	172.34

Date :

Next Page...

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MK18B1.000x1.000

PO / BATCH NO.: 039126/3048661

DATE: MAR 07 2018

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: 1.000

QUANTITY RECEIVED: 12'

THICKNESS RECEIVED: 1.000

QUANTITY INSPECTED: 12'

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>Agim A108</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Heat # 411986</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

<b>QC 18 INSPECTION</b>	<b>ENGINEERING SIGNOFF (if required)</b>
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____
DATE: <u>MAR 07 2018</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 1018-1025 ROUND BAR  
SPECIFICATION: MIL-S-7097 OR ASTM A108  
PART NUMBER: M1018-R10.DDD WHERE D.DDD = DIAMETER IN INCHES  
D/A.

EG. 7/8" ROUND BAR = M1018-R0.875

TOLERANCES: PER ASTM A108 AS FOLLOWS:

SIZE TOLERANCE  
UP TO 1.5" INCL. +0.000/-0.002  
OVER 1.5" TO 2.5" INCL. +0.000/-0.003  
OVER 2.5" TO 4.0" INCL. +0.000/-0.004  
OVER 4.0" TO 6.0" INCL. +0.000/-0.005  
OVER 6.0" TO 8.0" INCL. +0.000/-0.006

RELEASED  
2012-09-24  
MJD

B	REFORMAT, ADD ASTM A108, ADD TOLERANCES	CP	12 09 05
A	NEW ISSUE	DS	01 06 12
REV.	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	CP		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	12.09.05		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO M1018-R			
REV. B			
SHEET 1 OF 1			
TITLE 1018-1025 ROUND BAR			
SCALE NTS			
DATE 12.09.05			
COPYRIGHT © 2001 BY DART AEROSPACE LTD. THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.			

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M1018R 0.313  
 DATE: MAR 07 2018

PO / BATCH NO: 039126 / 5048317

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 12'  
 QUANTITY INSPECTED: 12'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.313 0.375  
 THICKNESS RECEIVED: 0.313 0.375  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	Astm A108
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 41776 QM
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____		
DATE: <u>11 MAR 07 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 1018-1025 ROUND BAR  
SPECIFICATION: MIL-S-7097 OR ASTM A108  
PART NUMBER: M1018-RD-DDD WHERE D DDD = DIAMETER IN INCHES  
DIA.

EG. 7/8" ROUND BAR = M1018-R0.875

TOLERANCES: PER ASTM A108 AS FOLLOWS:

SIZE TOLERANCE  
UP TO 1.5" INCL. +0.000/-0.002  
OVER 1.5" TO 2.5" INCL. +0.000/-0.003  
OVER 2.5" TO 4.0" INCL. +0.000/-0.004  
OVER 4.0" TO 6.0" INCL. +0.000/-0.005  
OVER 6.0" TO 8.0" INCL. +0.000/-0.006

RELEASED  
2012-09-24  
MJD

B	REFORMAT. ADD ASTM A108, ADD TOLERANCES	CP	12 09 05
A	NEW ISSUE	DS	01 06 12
REV	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	CP		
CHECKED	CP		
MFG. APPR.	CP		
APPROVED	CP		
DE APPR.	CP		
DATE	12.09.05		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M1018-R			
REV. B SHEET 1 OF 1			
TITLE 1018-1025 ROUND BAR			
SCALE NTS			
DATE 12.09.05			
COPYRIGHT © 2001 BY DART AEROSPACE LTD.			
THE DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED ONLY FOR THE PURPOSES FOR WHICH IT WAS ORIGINALLY DESIGNED.			



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304B0.750x2.500

PO / BATCH NO.: 039126/5048657

DATE: MAR 07 7<sup>01</sup>8

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: 0.750

QUANTITY RECEIVED: 36'

THICKNESS RECEIVED: 0.750

QUANTITY INSPECTED: 36'

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>N</u>	
CORRECT FINISH	<u>Y</u>	N	
CORROSION	Y	<u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u>	N	<u>As per A 276</u>
CORRECT THICKNESS	<u>Y</u>	N	
PHOTO REQUIRED	Y	<u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u>	N	<u>Heat # 26600</u>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u>	N	
CORRECT M# ON THE MATERIAL	<u>Y</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____		
DATE: <u>9-3 MAR 07 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

△ PURCHASE MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE  
(NOTE: MSN-303 NOT ACCEPTABLE)

△ SPECIFICATION:  
PART NUMBER: M304B | T.TTT | X | WWW.WWWW |  
| THICK | | WIDTH |

WHERE "T.TTT" = THICKNESS IN INCHES  
AND "WWW.WWWW" = WIDTH IN INCHES

△ EG. 0.5" x 3.0" BAR = M304B0.500X03.000  
△ EG. 0.5" x 12.0" PLATE = M304B0.500X12.000

RELEASED  
2010-11-30

C	ADDED PLATE TO PURCHASE MATERIAL, ADDED PLATE REVISIONS TO BE CHANGED TO "304/316 BAR/PLATE" FROM "304/316 BAR" TO "304/316 BAR/PLATE"	MB	10.11.25
B	REFORMAT DWG, ADD SPECS (ZN 06-1).	CP	09.07.15
A	NEW ISSUE	PH	05.06.10
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.11.25		

DART AEROSPACE LTD	
HAWKESBURY, ONTARIO, CANADA	
DRAWING NO.	M304B
TITLE	304/316 BAR/PLATE
REV. C	SHEET 1 OF 1
SCALE	NTS
COPYRIGHT © 2005 BY DART AEROSPACE LTD	
THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR ANY PURPOSE AND FOR ANY REASON WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T680.750X04.000 PO / BATCH NO.: 039126/5048656  
 DATE: MAR 07 2018

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 12'  
 QUANTITY INSPECTED: 12'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.750  
 THICKNESS RECEIVED: 0.750  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y N	
CORROSION	Y <input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y N	<u>Aston B221</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y N	<u>Test # 70740</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____		
DATE: <u>9-03 MAR 07 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR

SPECIFICATION:

QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221

PART NUMBER:

M6061T6B | T. TTT | X | WW.WWW  
THICK | WIDTH

WHERE "T. TTT" = THICKNESS IN INCHES  
"WW.WWW" = WIDTH IN INCHES

E.G. 1.0" X 12.0" BAR = M6061T6B1.000X12.000

RELEASED  
R 2009-08-03  
MJP

B	REMOVE QQ-A-250/11 OPTION, REFORMAT NOTES, ADD ASTM B211/B221 (2ND D7-1)	CP	09.07.13
A	NEW ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	DS		
CHECKED	DS		
MFG. APPR.	DS		
APPROVED	DS		
DATE	09.07.13		

DART AEROSPACE LTD HAWKESSBURY, ONTARIO, CANADA	
DRAWING NO.	M6061T6B
TITLE	6061-T6 BAR
REV. B	SHEET 1 OF 1
SCALE	NTS
COPYRIGHT © 2001 BY DART AEROSPACE LTD ALL RIGHTS RESERVED. NO PART OF THIS PUBLICATION MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606176B2.C00X01.250 PO / BATCH NO.: 039126/5048655  
 DATE: MAR 07 2018

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 12'  
 QUANTITY INSPECTED: 12'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 01.250  
 THICKNESS RECEIVED: 01.250  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>(N)</u>	
CORRECT FINISH	<u>(Y)</u>	N	
CORROSION	Y	<u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>(Y)</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>(Y)</u>	N	<u>Astm B221</u>
CORRECT THICKNESS	<u>(Y)</u>	N	
PHOTO REQUIRED	Y	<u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>(Y)</u>	N	<u>Heat # 3B5790</u>
CORRECT MATERIAL IDENTIFICATION	<u>(Y)</u>	N	
CORRECT M# ON THE MATERIAL	<u>(Y)</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAN</u>	DATE: <u>MAR 07 2018</u>	SIGNED OFF BY: _____	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR

SPECIFICATION:  
 QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
 OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
 OR ASTM B211 OR ASTM B221

PART NUMBER: M6061T6B | T.TTT | X | WW.WWW | THICK | WIDTH

WHERE "T.TTT" = THICKNESS IN INCHES  
 "WW.WWW" = WIDTH IN INCHES

E.G. 1.0" X 12.0" BAR = M6061T6B1.000X12.000

**RELEASED**  
 2009-08-02  
*MP*

B	REMOVE QQ-A-250/11 OPTION, REFORMAT NOTES, ADD ASTM B211/B221 (ZND7-1)	CP	09 07 13
A	NEW ISSUE	DS	01 06 08
REV.	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN			
CHECKED	<i>MP</i>		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.07.13		

<b>DART AEROSPACE LTD</b>	
HAMKESBURY, ONTARIO, CANADA	
DRAWING NO	REV. B
M6061T6B	SHEET 1 OF 1
TITLE	SCALE
6061-T6 BAR	NTS

COPYRIGHT © 2001 BY DART AEROSPACE LTD  
 THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD  
 AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-A513 TL 000W.120

PO / BATCH NO.: 039126/5048654

DATE: MAR 07 2018

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 23'  
 QUANTITY INSPECTED: 23'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.120  
 THICKNESS RECEIVED: W.120  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>(N)</u>	
CORRECT FINISH	<u>(Y)</u>	N	
CORROSION	Y	<u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>(Y)</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>(Y)</u>	N	<u>Aston A513</u>
CORRECT THICKNESS	<u>(Y)</u>	N	
PHOTO REQUIRED	Y	<u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>(Y)</u>	N	<u>Heat # D32954</u>
CORRECT MATERIAL IDENTIFICATION	<u>(Y)</u>	N	
CORRECT M# ON THE MATERIAL	<u>(Y)</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAC</u> DATE: <u>MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: ASTM A513 TYPE 5 (1020/1026) SEAMLESS ALLOY STEEL ROUND TUBING (DOM)

SPECIFICATION: ASTM A513 TYPE 5

PART NUMBER: MT-A513-T-[D.DDD][T.TTT]

WHERE D.DDD IS OUTSIDE DIAMETER IN INCHES

WHERE T.TTT IS WALL THICKNESS IN INCHES

EG. 3/4" ROUND TUBING WITH .120" WALL THICKNESS = MT-A513-T-0.750W0.120

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW RELEASE	17-855	17.09.06	VM	VM
B	TYPE 5 ADDED, TEMPLATE UPDATED	17-790	17.12.13	VM	ML



TITLE: ASTM A513 TYPE 5 (1020/1026) ALLOY STEEL ROUND TUBING (DOM)

PART NO. MT-A513-T

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
DIMENSIONS IN PARENTHESES ARE METRIC EQUIVALENTS  
DIMENSIONS APPLY AFTER FINISHING

DESIGNED BY: VM 1/12/13  
DRAWN BY: VM 12/13/2017  
CHECKED BY: ML 12/20/2017  
APPROVED BY: ML 12/20/2017

TOLERANCES  
FRACTIONS & 1/8  
DECIMALS  
SURFACE  
ROUGHNESS

SCALE: NTS

SHEET 1 OF 1

THIS DOCUMENT IS PRIVATE AND NOT FOR RELEASE OR DISSEMINATION  
WITHOUT THE WRITTEN PERMISSION OF PART AEROSPACE LTD.

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304RO.625  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126 / 5048653

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 26'  
 QUANTITY INSPECTED: 26'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625  
 THICKNESS RECEIVED: 0.625  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y	N	
CORROSION	Y	<input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	N	<u>As per A276</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y	N	
PHOTO REQUIRED	Y	<input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	N	<u>Heat # 439067</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> DATE: <u>MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR  
(NOTE: AISI 303 NOT ACCEPTABLE)

B SPECIFICATION:

PART NUMBER:

ASTM A276  
M304R(D.DDD)  
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES  
EG. 0.75" ROUND BAR = M304R0.750

RELEASED  
R 08/03/15

R	REFORMAT DWG. ADD SPECS (ZN D6-1). REF PAR 08-020A	CP	08.07.15
A	NEW ISSUE	AJS	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	GA		
CHECKED	GA		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.07.15		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304R			
REV. B			
SHEET 1 OF 1			
TITLE 304/316 ROUND BAR			
SCALE NTS			
DATE 09.07.15			
COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES SPECIFIED ONLY. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING. DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA.			

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304R5.500  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048652

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 8'  
 QUANTITY INSPECTED: 8'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 5.500  
 THICKNESS RECEIVED: 5.500  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>Agitor A276</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Heat # 41297</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> DATE: <u>9-30 MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR  
(NOTE: AISI 303 NOT ACCEPTABLE)

B SPECIFICATION:

ASTM A276

PART NUMBER:

M304R(D.DDD)  
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M304R0.750

RELEASED  
10/03/23

B	REFORMAT DWG. ADD SPECS (ZN DE-1).	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	GA		
CHECKED	GA		
MFG. APPR.	GA		
APPROVED	GA		
DE APPR.	GA		
DATE	09.07.15		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304R			
REV. B			
SHEET 1 OF 1			
TITLE			
304/316 ROUND BAR			
SCALE			
NTS			
COPYRIGHT © 2008 BY DART AEROSPACE LTD			
THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES FOR WHICH IT WAS ISSUED AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.			

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061H65.250  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5042659

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 32 P12  
 QUANTITY INSPECTED: 32 P12  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .250  
 THICKNESS RECEIVED: .250  
 SHEET SIZE ORDERED: 4x8  
 SHEET SIZE RECEIVED: 4x8

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>(N)</u>	
CORRECT FINISH	<u>(Y)</u>	N	
CORROSION	Y	<u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>(Y)</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>(Y)</u>	N	<u>QQ-A-250/11</u>
CORRECT THICKNESS	<u>(Y)</u>	N	
PHOTO REQUIRED	Y	<u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>(Y)</u>	N	<u>Heat # 16-39426053</u>
CORRECT MATERIAL IDENTIFICATION	<u>(Y)</u>	N	
CORRECT M# ON THE MATERIAL	<u>(Y)</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____	
DATE: <u>9-30</u> <u>MAR 07 2018</u>	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T62 ALUMINUM SHEET

SPECIFICATION: QQ-A-250/11 OR AMS-QQ-A-250/11  
OR AMS 4025 OR AMS 4027  
OR ASTM B209

PART NUMBER: M6061T6S | XXX | THK

WHERE "XXX" = SHEET THICKNESS (IN INCHES)

EG. 0.063" THICK SHEET = M6061T6S.063

PREFERRED SIZE: XXX BY 4 FT BY 8 FT

RELEASED  
N 2009-09-10

B	REFORMAT DWG. ADD B209 SPEC (ZN D8-1). REF PAR 08-020A	CP	09.07.13
A	NEW ISSUE	DS	01.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.07.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. B SHEET 1 OF 1	
DRAWING NO. M6061T6S		TITLE 6061-T6 SHEET SPEC	
		SCALE NTS	
COPYRIGHT © 2001 BY DART AEROSPACE LTD ALL RIGHTS RESERVED. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.			



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061H6S.050  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048658

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 96 P12  
 QUANTITY INSPECTED: 96 P12  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .050  
 THICKNESS RECEIVED: .050  
 SHEET SIZE ORDERED: 4X12  
 SHEET SIZE RECEIVED: 4X12

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	QQ-A-250/11
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat# 32115701
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u>		SIGNED OFF BY: _____	
DATE: <u>9-29</u> MAR 07 2018		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

**SPECIFICATION CONTROL DRAWING**

PURCHASE MATERIAL: 6061-T6/T82 ALUMINUM SHEET

SPECIFICATION: QQA-250/11 OR AMS-QQA-250/11  
OR AMS 4025 OR AMS 4027  
OR ASTM B209

PART NUMBER: M6061T6S | XXX | THK

WHERE ".XXX" = SHEET THICKNESS (IN INCHES)

EG. 0.063" THICK SHEET = M6061T6S.063

PREFERRED SIZE: .XXX BY 4FT BY 8FT

**RELEASED**  
R 2009-09-10  
MAP

B	REFORMAT DWG. ADD B209 SPEC (2N D8-1).	CP	09 07 13
A	NEW ISSUE	DS	01 06 08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.07.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6S			
REV. B			
SHEET 1 OF 1			
TITLE			
6061-T6 SHEET SPEC			
SCALE			
NTS			
DATE 09.07.13			
COPYRIGHT © 2001 BY DART AEROSPACE LTD			
THIS DOCUMENT IS UNCLASSIFIED AND IS NOT TO BE RELEASED OR REPRODUCED WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD			

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304S 206A  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048651

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 96 P<sup>2</sup>  
 QUANTITY INSPECTED: 96 P<sup>2</sup>  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 206A  
 THICKNESS RECEIVED: 206A  
 SHEET SIZE ORDERED: 4x8  
 SHEET SIZE RECEIVED: 4x8

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	Asme SA 240
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 893274
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>D. 11</u>	SIGNED OFF BY: _____		
DATE: <u>9-07 MAR 07 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED

SPECIFICATION:

MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
OR ASTM A240  
OR ASME SA240

FINISH:

FINISH  
UNPOLISHED No. 1  
UNPOLISHED No. 2D  
UNPOLISHED No. 2B  
POLISHED No. 3  
POLISHED No. 4  
BUFFED No. 6  
BUFFED No. 7  
BUFFED No. 8

DART M-NUMBER  
IDENTIFIER

1P  
2D  
NONE  
3P  
4P  
6P  
7P  
8P

PART NUMBER:

M304S TT GA #P  
GA

WHERE "TT" = GAUGE THICKNESS  
WHERE "P" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA  
EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.09375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325

RELEASED

2015 FEB 04

ECN 15-122

REV.	DESCRIPTION	DATE
D	ADDED GAUGES 0.7.	AJS 15.01.06
C	DEFINED FINISH OPTION (ZN C8) AND EXAMPLE OF MATERIAL PIN WITH FINISH OTHER THAN 2B (ZN B5).	MB 12.09.20
B	REFORMAT DWG. ADD ASTM/ASME SPECS (ZN D8-1), ADD GAUGE REF (C8-1) REF PAR 05-020A	CP 09.06.01
A	NEW ISSUE	DS 01.09.24
DESIGN	DS	BY
DRAWN	AJS	DATE
CHECKED		
MFG. APPR.		
APPROVED		
DE APPR.		
DATE	15.01.06	
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWING NO. M304S		
REV. D		
SHEET 1 OF 1		
TITLE 304/316 SS SHEET		
SCALE NTS		
COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND NOT FOR RELEASE OR DISSEMINATION WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD		

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3045166A  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048650

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 192<sup>PI</sup>  
 QUANTITY INSPECTED: 192<sup>PI</sup>  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 16GA  
 THICKNESS RECEIVED: 16GA  
 SHEET SIZE ORDERED: 4X8  
 SHEET SIZE RECEIVED: 4X8

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	ASTM A240
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Heat # 514212
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u> DATE: <u>9-30</u> MAR 07 2018	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED

SPECIFICATION:

MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5521 (316)  
OR ASTM A240  
OR ASME SA240

FINISH:

FINISH  
UNPOLISHED No. 1  
UNPOLISHED No. 2D  
UNPOLISHED No. 2B  
POLISHED No. 3  
POLISHED No. 4  
BUFFED No. 6  
BUFFED No. 7  
BUFFED No. 8

DART M-NUMBER  
IDENTIFIER  
1P  
2D  
NONE  
3P  
4P  
6P  
7P  
8P

PART NUMBER:

M304S TT GA #P  
GA

WHERE "TT" = GAUGE THICKNESS  
WHERE "#P" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA  
EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.08375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325

RELEASED  
2015 FEB 04  
ECL 15-122 q

REV	DESCRIPTION	DATE
A	NEW ISSUE	01.09.24
B	REFORMAT DWG. ADD ASTM/ASME SPECS (ZN D8-1), ADD GAUGE REF (C8-1), REF PAR 08-020A	09.06.01
C	DEFINED FINISH, OPTION (ZN C8) AND EXAMPLE OF MATERIAL FIN WITH FINISH OTHER THAN 2B (ZN 85).	12.09.20
D	ADDED GAUGES 0-7.	15.01.06

DESIGN	DS	DATE
DRAWN	AJS	BY
CHECKED		
MFG. APPR.		
APPROVED		
DE APPR.		
DATE	15.01.06	

DART AEROSPACE LTD	REV. D
HAWKESBURY, ONTARIO, CANADA	SHEET 1 OF 1
DRAWING NO. M304S	SCALE
TITLE	304/316 SS SHEET
NTS	

COPYRIGHT © 2001 BY DART AEROSPACE LTD  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS BANNED ON THE EXPRESS CONDITION THAT IT IS NOT REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304S186-A  
DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048649

MATERIAL CERT REC'D: YES  
QUANTITY RECEIVED: 64PI2  
QUANTITY INSPECTED: 64PI2  
QUANTITY REJECTED: 0

THICKNESS ORDERED: 186A  
THICKNESS RECEIVED: 186A  
SHEET SIZE ORDERED: 4x8  
SHEET SIZE RECEIVED: 4x8

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y N	
CORROSION	Y <input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y N	ASME SA240
CORRECT THICKNESS	<input checked="" type="radio"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y N	Heat # L2573C03
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u> <u>11</u>	SIGNED OFF BY: _____		
DATE: <u>9-89</u> <u>MAR 07 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED

SPECIFICATION:

MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
OR ASTM A240  
OR ASME SA240

FINISH:

FINISH  
UNPOLISHED No. 1  
UNPOLISHED No. 2D  
UNPOLISHED No. 2B  
POLISHED No. 3  
POLISHED No. 4  
BUFFED No. 6  
BUFFED No. 7  
BUFFED No. 8

PART NUMBER:

M304S TT GA #P  
GA

WHERE "TT" = GAUGE THICKNESS  
WHERE "#P" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA  
EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021675	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.09375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325

RELEASED

2015 FEB 04

ECN 15-122

REV	DESCRIPTION	DATE
D	ADDED GAUGES 0-7.	AJS 15.01.06
C	DEFINED FINISH OPTION (ZN CB) AND EXAMPLE OF MATERIAL FIN WITH FINISH OTHER THAN 2B (ZN BS).	MB 12.09.20
B	REFORMAT DWG. ADD ASTM/ASME SPECS (ZN 08-1), ADD GAUGE REF (CB-1), REF PAR 08-020A	CP 09.06.01
A	NEW ISSUE	DS 01.09.24
DESIGN	DS	DATE
DRAWN	AJS	
CHECKED		
MFG. APPR.		
APPROVED		
DE APPR.		
DATE	15.01.06	
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWING NO. M304S		
TITLE 304/316 SS SHEET		
SHEET 1 OF 1		
SCALE NTS		
REV. D		
COPYRIGHT © 2001 BY DART AEROSPACE LTD		
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3045116A  
 DATE: MAR 07 2018

PO / BATCH NO.: P0039126/5048648

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 96 Pcs  
 QUANTITY INSPECTED: 96 Pcs  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 116A  
 THICKNESS RECEIVED: 116A  
 SHEET SIZE ORDERED: 4x8  
 SHEET SIZE RECEIVED: 4x8

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>N</u>	
CORRECT FINISH	<u>Y</u>	N	
CORROSION	Y	<u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u>	N	<u>Astm A240</u>
CORRECT THICKNESS	<u>Y</u>	N	
PHOTO REQUIRED	Y	<u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u>	N	<u>Heat #459P</u>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u>	N	
CORRECT M# ON THE MATERIAL	<u>Y</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>DAS</u> <u>11</u> DATE: <u>9-89 MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

**SPECIFICATION CONTROL DRAWING**

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED

SPECIFICATION:

MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
OR ASTM A240  
OR ASME SA240

FINISH:

FINISH  
UNPOLISHED No. 1  
UNPOLISHED No. 2D  
UNPOLISHED No. 2B  
POLISHED No. 3  
POLISHED No. 4  
BUFFED No. 6  
BUFFED No. 7  
BUFFED No. 8

DART MANUFACTURER  
IDENTIFIER  
1P  
2D  
NONE  
3P  
4P  
6P  
7P  
8P

PART NUMBER:

M304S TT GA #P  
GA

WHERE "TT" = GAUGE THICKNESS  
WHERE "#P" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA  
EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.059
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.09375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325

**RELEASED**

2015 FEB 04

ECN 15-122

D	ADDED GAUGES 0.7.	AJS	15.01.06
C	DEFINED FINISH OPTION (ZN CB) AND EXAMPLE OF MATERIAL FIN WITH FINISH OTHER THAN 2B (ZN BS).	MB	12.09.20
B	REFORMAT DWG. ADD. ASTM/ASME SPECS (ZN D8-1), ADD GAUGE REF (CB-1), REF PAR 09-020A	CP	09.06.01
A	NEW ISSUE	DS	01.09.24
REV	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	AJS		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	15.01.06		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304S			
TITLE 304/316 SS SHEET			
REV. D SHEET 1 OF 1			
SCALE NTS			
COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED ONLY FOR THE PURPOSES FOR WHICH IT WAS ISSUED. NO PART OF THIS DOCUMENT IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.			

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304BQ.625X6.000  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048647

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 6  
 QUANTITY INSPECTED: 6  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.625  
 THICKNESS RECEIVED: 0.625  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>Astm A240</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Heat # 702625E</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>11</u> DATE: <u>MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

△ PURCHASE MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE  
(NOTE: AISI 303 NOT ACCEPTABLE)

△ SPECIFICATION: ASTM A276 OR ASTM A240  
PART NUMBER: M304B | T.TTT | X | WW.WWW |  
THICK | WIDTH

WHERE "T.TTT" = THICKNESS IN INCHES  
AND "WW.WWW" = WIDTH IN INCHES

△ EG. 0.5" x 3.0" BAR = M304B0.500X03.000  
EG. 0.5" x 12.0" PLATE = M304B0.500X12.000

RELEASED  
2010-11-30  
JW

C	ADDED PLATE TO PURCHASE MATERIAL, ADDED PLATE REVISIONS AND EG. CHANGED TITLE FROM "304/316 BAR" TO "304/316 BAR/PLATE"	MB	10.11.25
B	REFORMAT DWG. ADD SPECS (ZIN D6-1). REF PAR 08-020A	CP	09.07.15
A	NEW ISSUE	PH	05.08.10
REV	DESCRIPTION	BY	DATE
DESIGN	PH		
DRAWN	PH		
CHECKED	PH		
MFG. APPR.	PH		
APPROVED	PH		
DE APPR.	PH		
DATE	10.11.25		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304B			
TITLE 304/316 BAR/PLATE			
REV. C SHEET 1 OF 1			
SCALE NTS			
DATE 10.11.25			
COPYRIGHT © 2003 BY DART AEROSPACE LTD THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES SPECIFIED ONLY. NO OTHER REPRODUCTION OR TRANSMISSION IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.			



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304B 0.500x6.000  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048646

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 6'  
 QUANTITY INSPECTED: 6'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.500  
 THICKNESS RECEIVED: 0.500  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>(N)</u>	
CORRECT FINISH	<u>(Y)</u>	N	
CORROSION	Y	<u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>(Y)</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>(Y)</u>	N	<u>Astm A276</u>
CORRECT THICKNESS	<u>(Y)</u>	N	
PHOTO REQUIRED	Y	<u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>(Y)</u>	N	<u>Heat # 600J</u>
CORRECT MATERIAL IDENTIFICATION	<u>(Y)</u>	N	
CORRECT M# ON THE MATERIAL	<u>(Y)</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>[Signature]</u> DATE: <u>9-MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

△ PURCHASE MATERIAL: AISI 304/316 SS BAR OR AISI 304/316 SS PLATE  
(NOTE: AISI 303 NOT ACCEPTABLE)

△ SPECIFICATION: ASTM A276 OR ASTM A240  
PART NUMBER: M304B | T.TTT | X | WWW.WWWW |  
THICK | WIDTH

WHERE "T.TTT" = THICKNESS IN INCHES  
AND "WWW.WWWW" = WIDTH IN INCHES

△ EG. 0.5" x 3.0" BAR = M304B0.500X03.000  
△ EG. 0.5" X 12.0" PLATE = M304B0.500X12.000

RELEASED  
2010-11-30

C	ADDED PLATE TO PURCHASE MATERIAL, ADDED PLATE RELATED SPECIFICATIONS, AND EG.: CHANGED TITLE FROM "304/316 BAR" TO "304/316 BAR/PLATE"	MB	10.11.25
B	REFORMAT DWG. ADD SPECS (2N D8-1), REF PAR 08-020A	CP	09.07.15
A	NEW ISSUE	PH	05.06.10
REV.	DESCRIPTION	BY	DATE
DESIGN	PH		
DRAWN	PH		
CHECKED	PH		
MFG. APPR.	M304B		
APPROVED	PH		
DE APPR.	PH		
DATE	10.11.25		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. REV. C			
M304B SHEET 1 OF 1			
TITLE SCALE			
304/316 BAR/PLATE NTS			
COPYRIGHT © 2005 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			



## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4140H-R1.000  
 DATE: MAR 07 2018

PO / BATCH NO.: 039126/5048645

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 10  
 QUANTITY INSPECTED: 10  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.000  
 THICKNESS RECEIVED: 1.000  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>Astm A304</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Heat # 177569</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>31</u> DATE: <u>9:00 MAR 07 2018</u>	SIGNED OFF BY: _____ DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



DESIGN #	DRAWN BY #	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. M4140H-R	REV. A SHEET 1 OF 1
DATE 05.02.21		TITLE 4140 ROUND BAR	SCALE 1:1
A	05.02.21	NEW ISSUE	

PURCHASE MATERIAL: AISI 4140H ROUND BAR

PER AISI 4140 OR ASTM A304 02 / -A-434-BC /

-A193-03-GRADE-B7 / -A29-03 / -A322-91 OR

UNS # - G41400

MINIMUM ULTIMATE TENSILE STRENGTH = 100 ksi

MINIMUM YIELD TENSILE STRENGTH = 66 ksi

PART NUMBER: M4140H-R | D.DDD | WHERE D.DDD = DIAMETER IN INCHES  
DIA

EG. 7/8" ROUND BAR = M4140H-R0.875

RELEASED  
15 05 75

Copyright © 2005 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

#4919 R4140-1H-V P0.12367 49633

# Eaton Steel Bar Company Inspection Certificate 1686880

EN 10204:2004-3.1

BOL	Ship Date	Customer PO	Item	Customer Item	Item Description
222944	13-Dec-2017	B38364	11142 rev 005	505295	1 HR RD 4140/42MM 2418in SBQ QTSF EQ MST

All bundles listed below were produced using steel from Heat 177569 issued by ALTON STEEL and were completed from Eaton Steel Job 828517.

Chemistry	Description	Value	Units	Mechanical	Description	Value	Units
C	Carbon	0.41000	PMGT	TENSILE PSI	Tensile Strength in PSI Units	148000	PSI
Mn	Manganese	0.89000	PMGT	YIELD PSI	Yield Strength in PSI Units	138000	PSI
P	Phosphorus	0.01300	PMGT	ELONGATION	Percent Elongation	17.00	PCT
S	Sulfur	0.02000	PMGT	REDUCTION	Percent Reduction in Area	52.0	PCT
Si	Silicon	0.23000	PMGT	BRINELL SURF	Brinell Surface	271.0	BRN
Ni	Nickel	0.08900	PMGT	Heat Treating	Description	Value	Units
Cr	Chromium	0.84700	PMGT	TEMPER TEMP F	Temper Temp in Fahrenheit	500 - 2500	DEGF
Mo	Molybdenum	0.15900	PMGT	AUSTEN TEMP F	Austenitizing Temp in Fahrenheit	1600 - 1700	DEGF
Al	Aluminum	0.00300	PMGT	SR TEMP F	Stress Relief Temp in Fahrenheit	500 - 2500	DEGF
Cu	Copper	0.25000	PMGT	MAGNETISM-HT	Magnetism in Gauss	0 - 20	GN
V	Vanadium	0.02800	PMGT	TIME AT TEMP	Time at Temperature	Report	
Co	Columbium	0.00300	PMGT	QUENCH MEDIA	Quench Media Requirements	Per/O	
N	Nitrogen	0.01100	PMGT	STRESS FREE	Cert stress free	CERTIFIED	
P+S	Element Sum Limit	0.03300	PMGT	HT4140-420T	Quench & Temper	CONFORMS	
DI	Ideal Diameter	4.94000	IN	MILL PROCESSING	Description	Value	Units
Cleanliness	Description	Value	Units	MELT COUNTRY	Melted in Country	USA	
MACRO ETCH	Report macro etch results.	Value	Units	ROLLED COUNTRY	Rolled in Country	USA	
Geometry	Description	0.9910 - 1.0090	IN	RED RATIO	Reduction Ratio	4.94	RED
DIAMETER	Diameter	Value	Units	ASTM Standard	Description	Value	Units
Jominy	Description	Value	Units	A193/193M-01	Grade B7	CONFORMS	
J1	1/16 inch from Quenched End	56	HRC	A304-05	Carbon & Alloy Steel Bars End Quench Req	CONFORMS	
J2	2/16 inch from Quenched End	56	HRC	A322-13	Steel Bars, Alloy, Standard Grades	CONFORMS	
J3	3/16 inch from Quenched End	56	HRC	A334-90a-BC	ASTMA BC Tensile and Yield Properties	CONFORMS	
J4	4/16 inch from Quenched End	56	HRC	Structure	Description	Value	Units
J5	5/16 inch from Quenched End	56	HRC	PERCENT TM	Percent Tempered Martensite	80 - 100	PCT
J6	6/16 inch from Quenched End	55	HRC	MICROSTRUCTURE	Reported Microstructure	TM	
J7	7/16 inch from Quenched End	54	HRC	Tag Number	Qty Units	Length	
J8	8/16 inch from Quenched End	52	HRC	022-2158147	2925 LBS	24ft6in	
J9	9/16 inch from Quenched End	51	HRC				
J10	10/16 inch from Quenched End	50	HRC				
J11	11/16 inch from Quenched End		HRC				
J12	12/16 inch from Quenched End	47	HRC				
J14	14/16 inch from Quenched End	45	HRC				
J16	16/16 inch from Quenched End	42	HRC				
J18	18/16 inch from Quenched End	42	HRC				
J20	20/16 inch from Quenched End	41	HRC				
J22	22/16 inch from Quenched End		HRC				
J24	24/16 inch from Quenched End	39	HRC				
J28	28/16 inch from Quenched End	36	HRC				
J32	32/16 inch from Quenched End	35	HRC				

Bundle tags with Eaton Steel Identifiers reference the steel grade, heat, purchase order number where applicable, part number, product description and quantity. Material produced in accordance with Eaton Steel's Quality Manual QM-00002 Rev 0 dated 11/21/2013.

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

Created on 13-Dec-2017

This document was prepared by means of electronic data processing and is valid without signature

Thomas Snabes, Corporate Metallurgist

10221 Capital Avenue, Oak Park, MI 48237 USA

http://www.eatonsteel.com

Tel: 248-398-3434

Fax: 248-398-1434



Alton Steel Test Lab  
#5 Cut Street  
Alton, IL 62002-9011  
(318) 463-4490 EXT 2496  
(318) 463-4491 (Fax)

BILL TO		SHIP TO	
Edison Steel Corporation 10221 Capital Avenue Oak Park, MI 48237		Edison Steel Corporation c/o Apollo Heat Treat 10400 Capital Street Oak Park, MI 48237	
Date: 08/25/2017 ASI Ord No.: 97517 ASI Ord Line Item: 1	181339-HS 12013	Specifications: SAE 4140 ASTM A 304-1, ASTM A 322-07	
Item Description: 3/4" Bar, hot rolled, 1.0000, 2x 0			
Heat Number: 177559			
Grand Cst: 86 462.39-1			

CHEMICAL ANALYSIS TEST METHODS ASTM E-415 & E-1019																	
Yield P23		Tensile P22		% Elongation		% RMA		Band Test									
C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	Nb/Co	V	B	Ti	N	Cu	
0.41	0.89	0.013	0.020	0.23	0.25	0.089	0.947	0.139	0.011	0.003	0.003	0.028	0.0003	0.0001	0.0110	0.0019	


ZONITY HARDENABILITY USING ASTM A-255 CALCULATED FROM CHEMICAL C																	
Heat Number	GS	DI	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
177559	7	4.94	58	56	55	56	55	54	53	51	50	47	45	42	41	39	35

SPECIAL TEST RESULTS																	
ASTM E-45 Method A:		ASTM E-18 Method C:		SAE J422		ASTM E-381		Charpy		Hardness							
Heat Number	TA	TB	TC	TD	HA	HB	HC	HD	S	O	S	R	C	1	2	3	
177559																	

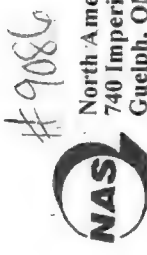
ADDITIONAL COMMENTS																	
No receipt, heat, return, of alpha containing material or adjustment is used or deliberately added to the production of this material. No weld or weld results were performed on this material. This steel is 100% Electric Arc Furnace Melting and is made in the U.S.A. Material qualified as NASTA originator. Subcontracted and owned by Edison Steel, Inc. and for the county of Madison, State of Illinois.																	
Quality Legend: 5000 HBS Date: _____ Day of _____ By: _____ Any customer's copy: _____ Edison Steel																	

		<b>Huntington Facility - Test Report</b> 25 Commercial Road, Huntington, IN 46750 (260) 356-9930 fax (260) 356-9522		Printed: 10/26/2017 11:10 AM									
Sales Order Heat Number Size Turned OD Grade		41745 177569 1.0000 1.0000 4140		Customer Name Location EATON STEEL CORPORATION 10221 CAPITAL AVE. OAK PARK, MI 48237									
Test Remarks: 1 HR RD 4140/42MM 25T FG FG MST													
Approved <input checked="" type="checkbox"/> By Metallurgist		Approved Date: 10/24/17		FG 1142									
<b>Chemistry Data</b>													
Heat Number	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Al	V	B	Other
177569	0.410	0.890	0.013	0.020	0.230	0.068	0.847	0.159	0.250	0.003	0.028	0.0030	
<b>Q&amp;T Hardness Test Data</b>													
Hardness Type	Min	Max	Location	Sample Location									
Rc		27.9	Surface	Surface									
Rc		32.7	Mid Radius	Mid Radius									
Rc		33.7	Core	Core									
<b>Q&amp;T Tension Test Data</b>													
Sample Gauge: 500" Dia. Base Number:													
Tensile	Yield 1	Method 1	Yield 2	Method 2	Elong %	R/A %	Gage Length	Tensile Location	PC #				
148 Ksi	138 Ksi	2% Offset			17.0	52.0	2.000" G.L.	Center					
<b>Heat Treat Data</b> Austenitized at 1,630°F for 0.7 minutes Tempered at 1,400°F for 0.7 minutes													
Induction Heating Water Quenched													
<b>Other Test Data</b>													
Decarb (inches)	Straightness (inches)	Magnesium (g/100g)	As Quenched (Rc)	Microstructure									
	0.125"/16 Ft	±.5											
Description of Other Tests • Produced Stress Free													

We hereby certify that the reported data are correct according to Gerdaus tests and those of its suppliers.

*D. J. Miller*  
 Doug Meach, Metallurgist





#9086 CO. 75982 DART  
North American Stainless Canada Inc.  
740 Imperial Road North  
Guelph, ON N1K1Z3  
Canada

# METALLURGICAL TEST REPORT

6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

Certificate: 355925 8  
Customer: 007185 001  
Your Order: 15496  
NAS Order: IN 0255577 13  
Date: 11/20/2017 Page: 1  
Steel: 304/304L  
Finish: 1  
Corrosion: ASTM A262/15 A 180Bend-O

**PRODUCT DESCRIPTION:**  
STAINLESS STEEL PLATE, HRAP; UNS 30400/30403  
ASTM A240/16a, A480/16b, A666/15, ASME SA240/15, SA480/15, SA666/15  
CHEM ONLY ON FOLLOWING ASTM: A276/17, A479/17, A484/16, A312/16  
CHEM ONLY ON FOLLOWING ASME: SA312/13, SA479/13  
AMS 5511H/5513J XMRK; MIL-S-5059D AMD3 (X CRN MEAS); MIL-S-4043B  
NACE MR0175/ISO 15156-3:2009 A, MR0103/07:QOS766D-A X MAG PERM  
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

**REMARKS:**  
Mat'l is Free of Mercury Contamination. No weld repairs.  
EN 10204:2004 3.1; RoHS 1 & 2 Compliant  
Material is Free of Radioactive Contamination  
Steel Making Process: EAF, AOD, & Cont. Casting  
Product Mfg. by a Quality Mgt. Sys. in Conf. w/ISO 9001  
\*Melted & Manufactured in the USA; Mat'l is DFARS Compliant

Product Id	Plate#	Skid #	Thickness	Width	Weight	Length	Mark	Pieces	Commodity Code
02600J HB	02600J HB	PK5213	.5000	60.0000	2,100	PLATE	240.00	57	1

**CHEMICAL ANALYSIS** CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)  
Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323  
Chemical Analysis per ASTM A751/14a

HEAT	CM	C %	CR %	CU %	MN %	MO %	N %	NI %	P %	S %
600J	US	.0158	18.0605	.3750	1.7165	.2690	.0763	8.0920	.0305	.0013
SI %										
.1505										

Product Id#	Plate#	Y	d	UTS	20C	.2% ELONG	% Hard	R of A
		o	r	KSI	KSI	%-2"	RB	%
02600J HB	02600J HB	F	T	87.39	38.36	65.40	80.50	67.81

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical  
Dept. Mgr.  
KRIS LARK  
11/20/2017

Aperam Inox América do Sul S.A.

aperam

PO.13907

PO. 75982  
MART

#9133

QUALITY CERTIFICATE

acc. to EN 10204-3.1.

Number:  
APERAM Order:  
Date:  
Invoice:

1980387  
79541101  
17/08/2017  
1191E17

PO# 15321

Steel grade:

Dimensions:

Marks:

Finish: NR1 - HOT ROLLED  
Product: PLATE  
Process: E

Heat nr.	C	Mn	Si	P	S	Cr	Ni	Mo	N	Al	Co	Cu
702625E	0.018	1.28	0.460	0.0353	0.0009	18.05	8.01	0.075	440	0.0033	0.170	0.1228
760990B	0.020	1.46	0.460	0.0395	0.0020	18.05	8.00	0.111	419	0.0037	0.165	0.1816

Chemical composition

Test/Variable		U.M.		Source:		Results	
Tensile Strength	KSI	99.21		H	T		
Yield Strength 0.2%	KSI	51.05		H	T		
Yield Strength 1.0%	KSI	51.05		H	T		
Elongation 2"	%	55.84					
Austen. Grain Size		53.00					
Hardness RB	HRB	84.76					
Oxalic Test:		DUAL	0	DUAL	0		
Net Weight		2.6560					
Gross Weight	LB	2.8770					

Heat & Lot Identification (U.M.):

Surface quality / dimensions:

Heat treatment: Nitrogen Solution anneal temp. 1900 F

Standards:

ASTM A480/A480M 16B  
DIN EN 10204-3.1 05  
AD 2000 W 2 08  
DIN EN 10088-2 14  
ASTM A240/A240M 16A  
DIN EN 10088-4 10  
AD 2000 W 0 06  
NACE MR01 ISO 15156 09  
DIN EN 10088-3 14  
ASME SA240/SA240M 15  
AD 2000 W 10 07  
DIN EN 10028-7 16E  
DIN EN 10088-4 10

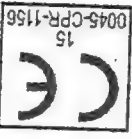
Remarks:

DUAL CERTIFIED AISI-304/304L NO WELD REPAIR PERFORMED Steel grade also acc. 1

a) Free from mercury contamination.  
b) Material free of contamination from radioactivity. (Guarantee while stored under responsibility of Aperam Inox América do Sul S.A.).  
c) Quality management system certified acc to standard ISO 9001 - Certificate ABS CE Nº 30071.  
d) Quality management system certified acc to standard ISO/TS 16949 - Certificate ABS CE Nº 38324.  
e) Environmental management system certified acc to standard ISO 14001 - Certificate ABS CE Nº 65989.  
f) Product and system certified according to standard AD2000 / MERKBLATT and PED (Directive 97/23/EC) by TÜV NORD (Notified Body Nr. 0045).g) Country of origin: Brazil. Country of manufacture: Brazil.  
h) Products supplied are according to DIN EN 10028-7 and DIN EN 10088-4.  
i) See Declaration of Performance (DOP) in www.aperam.com.br/astm/producao\_servicos/inox\_biblioteca.asp

Paulo Sérgio Ribeiro  
Qualified Inspector  
Aperam Inox América do Sul S.A.

0A2







North American Stainless Canada Inc.  
740 Imperial Road North  
Guelph, ON N1K1Z3  
Canada

## METALLURGICAL TEST REPORT

6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

Certificate: 323707 5

Customer: 007025 001

Date: 8/16/2017 Page: 1

Steel: 304/306L

Finish: 2B

Corrosion: ASTM A262/15 A; 180Bend-O

NAS Order: DS 0012604 01

Your Order: C17720

### PRODUCT DESCRIPTION:

STAINLESS STEEL SHEET, C.R. ANNEALED & PICKLED; UNS 30400/30403  
ASTM A240/16a, A480/16b, A566/15; ASME SA240/15, SA480/15, SA566/15  
CHEM ONLY ON FOLLOWING ASTM: A276/17, A479/17, A484/16, A312/16  
AMS 5511H/5513J XDRK; MIL-5059D AND3(X CRN MEAS); MIL-4043B  
NACE MR0175/ISO 15156-3:2009 A, MR0103/07; QQS766D-A X MAG PERM  
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

### REMARKS:

Mat'l is Free of Mercury Contamination. No weld repairs.  
EN 10204:2004 3.1; ROHS 1 & 2 Compliant  
Material is Free of Radioactive Contamination  
Steel Making Process: EAF, AOD, & Cont. Casting  
Product Mfg. by a Quality Mgt. Sys. in Conf. w/ISO 9001  
\*Melted & Manufactured in the USA; Mat'l is DFARS Compliant

Product Id	Coil #	Skid #	Thickness	Width	Weight	Length	Mark	Pieces	Commodity Code
E26433	01459P F		.1200	48.0000	4,175 SHEETS	096.00	1	27	NA

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan) Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323  
Chemical Analysis per ASTM A751/14a

HEAT	CM	C %	CR %	CU %	MN %	MO %	N %	NI %	P %	S %
459P	US	.0162	18.2830	.4160	1.7765	.3080	.0631	8.0820	.0310	.0010
	SI %									

### MECHANICAL PROPERTIES

Product Id#	Coil #	1 d o i c r	UTS KSI	20C KSI	.2% YB KSI	20C ELONG % 2"	Hard RB	Tail Hard
E26433	01459P	F T	93.97	47.25	48.77	85.00	85.50	

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical  
Dept. Mgr.

KRIS LARK

8/16/2017

44461

FXH 201

#3425

186

# INSPECTION CERTIFICATE

YIEH MAU CORP.

工廠: 高雄市路竹區新安路345號  
345, SHUN AN RD., LU CHU HSANG  
KAOHSIUNG HSIEN TAIWAN R.O.C.  
TEL: 07-9972845 FAX: 07-9973006  
CERTIFICATE NO: F17M810-1  
DATE OF ISSUE: 2014/2/17

PRIMARY COLD ROLLED STAINLESS STEEL SHEETS  
AISI 304 2B FINISH WITH PAPER INTERLEAVED  
AISI 304  
BAPET RESOURCES, INC.

SIZE	NO. of Product	Weight In KG NET	Heat No.	ID No.	Physical Properties Tensile Test GL=50 mm					Chemical Properties (%)							
					Y.S. PSI	T.S. PSI	EL. (%)	HARD	HV	C x 100	Si x 100	Mn x 100	P x 1000	S x 1000	Ni x 100	Cr x 100	N x 100
.120"(3.0MM) X 48" X 96"	1	1871	YU183047	65S16127A-212	307	678	64	85	171	4.2	43	88	34	2	810	1618	2.6
.105"(2.7MM) X 48" X 96"	1	1814	LZ513A08	60579108B-211	316	678	61	88	163	2.1	39	106	24	3	806	1632	0.3
.075"(1.9MM) X 48" X 96"	1	1890	LZ142025	65879192B-22	319	670	53	88	175	2.2	64	81	36	4	803	1628	0.3
.060"(1.5MM) X 48" X 96"	1	1883	YU276885	65S15258B-1	288	663	53	83	164	2.3	37	101	36	1	806	1612	3.4
.048"(1.2MM) X 48" X 96"	1	1813	LZ513C03	60579416A-21	302	684	49	88	184	1.7	45	105	23	4	806	1610	5.4
					YU183647												
					LZ513A08												
					LZ142025												
					YU276885												
					LZ513C03												

ASTM A486-15/ASME SA486-15 ANNEALED  
COUNTRY OF MOLT AND MANUFACTURE: TAIWAN

NO MERCURY CONTAMINATION  
WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS  
BEEN MADE IN ACCORDANCE WITH THE RULES OF THE MRL CERTIFICATE

REMARK: 0000 FOR ALL HEAT NO.  
1. ASME SA486-15/ASME SA486-15 TYPE 304  
2. INTERGRANULAR CORROSION IN ACCORDANCE WITH ASTM A262-E  
3. Erosion Corrosion Test (ASTM E167, W1, C1007) (ASTM E92, W1)  
4. Tensile Test: ASTM E8  
5. Test Method: C.3.3 (ASTM E167, W1)  
6. Other Element: ASTM B1098, '00  
7. MERCURY FREE

YIEH MAU CORP.  
Manager of Quality Assurance

<b>Inspección Certificada</b> CERTIFICADO DE INSPECCIÓN ABNATEPPEPRÜFZEUGNIS according to / de acuerdo con / nach EN 10204-3.1 Page / Página / Seite 1 / 1		<b>outokumpu</b> outokumpu Stainless USA, LLC An ISO 9001:2008 certified company BU PED 97/23/EC, Annex I, 4.3 certified Certificate is general and non-specific Das Zertifikat ist allgemein und nicht spezifisch		Name of report / Nombre del informe / Name der Sachverhalt Number / Número / Nummer 1231 025 5021 Date of issue and validation / Fecha de emisión y validación / Datum Ausstellung / Berechtigung 02/27/2017 This document shall not be altered or reproduced, except in full Nach Änderungen, Reproduktion, etc. may be prosecuted by law.	
The information provided is a true copy of data on file / Los datos aquí proporcionados son una copia verdadera de los datos en el archivo / Die hiermit angegebene Information ist eine Kopie der tatsächlichen Daten					
Country of Heat as per ISO 3166-1 Product manufactured in the USA EU RoHS Directive 2011/65/EU Compliant Free of radioactive contamination No intentional additions of Mercury compounds were made or used No welding or weld repairs were performed on this material Bending test O.K. Heat Treatment: Solution annealed 1920 °F Min, Air or water cooled Test of clarity (specimen analysis) / Control de claridad (análisis de muestra) / Klarheitsprüfung (Probekörperanalyse) OK OK ASTM A 262 PRACTICE E - Sample Acceptable					
Inspection lot / Lote de inspección / Loten V30.2% TS E A2 HRB 57.7 58.1 84 84					
Transverse Sample position / Posición de la muestra / Probenlage 514212 USA % C 0.027 % Si 0.38 % Mn 1.28 % P 0.025 % S 0.0010 % Cr 18.05 % Ni 0.21 % Mo 0.03 % N 0.067 % Cu 0.27					
Heat / Calor / Wärme 7081588 34 2.601 lb / 1.180 kg 2.601 lb / 1.180 kg 790960 514212 1000461411 1000461412					
Product dimensions (Thickness / Width / Length) / Dimensiones (Grosor / Ancho / Largo) / Maße des Erzeugnisses (Dicke / Breite / Länge) 1.52 mm x 2.19.20 mm x 2.438.40 mm 0.0600 inch x 48.0000 inch x 96.0000 inch ADD Rtc / 26					
ASTM A666-15 ASTM A240/A240M-16A, ASME SA-240 Sec. II part A Ed.2015 ASTM A480/A480M-16B, ASME SA-480 Sec. II part A Ed.2015 TYPE 304L/304 SHEET/HOJA/LIECHT Final grade and quality / Grado final y calidad / Endgültige Festlegung 85464520 / 010 Delivery note no. / Nº de entrega / Lieferungs-Nr. 801213420 / 002 Marked with the words "outokumpu" / Markiert mit den Worten "outokumpu" / Markiert mit den Worten "outokumpu" C17332 Certificate number / Nº de certificado / Zertifikatsnummer					
0000253804 / 02/27/2017					

48611

555-16648 304213

# 3419



NOTICE OF SHIPMENT/  
PACKING LIST



Flat Rolled Products

CERTIFICATE OF TEST

AL 6166-8 0417

CUST ORDER NO. & DATE

C18138

FORMS DISTRIBUTION

SHIP TO → 1 SHIP TO → SPEC →

CUST. CODE

11/22/17 A788650  
MG BILL  
L82405

FINISHING LOCATION

VANDERGRIFF, PA  
GOVT. CONTRACT  
7219.33.0000

SHIPPER NO.

550144

PRODUCT CODE

13020102060000

MILL ORDER NUMBER

30-117-426

DATE SHIPPED

11/27/17

INVOICE

668536

SHIPPING LOCATION

VANDERGRIFF

MAT'L

1121

GOVT. CONTRACT

7219.33.0000

DO. DATE

06923-0 25

PRIME SEC.

DSO DSO  
30 45

GRADE AND SPECIFICATIONS

"A11 304" STAINLESS STEEL SHEET C R COILS ANNEALED 2B FIN 3 EDGE (ASTM-A-240-16A)

CARRIER - LUKEHART TRUCKING, LLC

(ASTM-A-240-16A)

ITEM PCS DIMENSIONS W/G/L

001B 1 48.7.0351/2742.

C CUST IDENTITY 3042B.0351X48-RC

1 SKID

HEAT # COIL #

853274 AAC07322-A

TEST # GROSS TARE NET THEO TAG #/ CD SKID

8852660 15965 50 15915 534875

15965 50 15915

P820069.

ORDER REMARKS: EXW - EXCEPT VAT AND OTHER APPLICABLE LOCAL TAXES WHICH ARE THE RESPONSIBILITY OF THE BUYER  
DIST: EMAIL INVOICE TO AP@SAMUEL.COM VMI ITEM - DO NOT SEND ACK TO SOLD-TO, SEND TO SAMUEL SON &  
CO LTD, 2360 DIXIE ROAD, MISSISSAUGA, ON, CANADA L4Y 1Z7

TYPE HEAT/TEST (WT %)

HEAT 853274

0.02	1.63	0.033	0.0003	0.37	18.21	8.11	0.07
BN	BN	BN	BN	BN	BN	BN	BN

TEST LOCATION

YIELD TENSILE % ELONG

PSI *	PSI	IN 2"	% R/A	HARDNESS	( MEASURED )	BEND	A 262 PR ESIZ
T 46800.	95500.	54. #	NR	82.HRBW	(68.HR30TW )	NR	NR
T 46600.	94900.	54. #	NR	81.HRBW	(67.HR30TW )	TC	TC

CORROSION ASTM GRAIN

PASS

TC

\* Y.S. BY 0.2% OFFSET METHOD

# ELONG AT FRACTURE

NR = DATA NOT REQUIRED

GRADE VERIFICATION WAS CARRIED OUT SPECTROSCOPICALLY

PAGE 01 - CONTINUED ON PAGE 02

11/27/17 15:01:12

CONSIGNEE-Please Note-This assignment was turned over to  
seller in first class condition, being correctly loaded, at which time  
or responsibility for loss or damage in shipment ceased. For your  
protection please examine shipment as it arrives. If any shortage or  
damage is discovered, have a full description made by (importation  
agent on waybill before signing.

WARNING  
Safety Data Sheets for this product are available on our  
website, www.ATI Metals.com. A thorough review of the  
Safety Data Sheet for the grade of material purchased shall be  
performed prior to working with this product and all safety &  
health considerations outlined must be implemented.

The above is a true copy of data on file. The material and test results conform to the sales contract and specification(s) as set forth in ATI Flat Rolled  
Products' Order Acknowledgement.

Noreen DeFerrari  
Sr. Manager Quality, Corporate Quality Assurance

1

NOTICE OF SHIPMENT/  
PACKING LIST



Flat Rolled Products

CERTIFICATE OF TEST

AL 6168-8 0417

CUST. ORDER NO. & DATE

C18138

FORMS DISTRIBUTION

1 SHIP TO →

CUST. CODE

11/22/17 A788650

MG BILL

L82405

FINISHING LOCATION

VANDERGRIFT, PA

SHIPPER NO.

550144

PRODUCT CODE

13020102060000

MILL ORDER NUMBER

30-117-426

DATE SHIPPED

11/27/17

INVOICE

668536

SHIPPING LOCATION

PA

MAT'L

1121 VANDERGRIFT

GOVT. CONTRACT

7219-33-0000

DO PRI

06925-028

PRIME SEC.

DSO

DSO

30

45

GRADE

"ATI 304" STAINLESS STEEL SHEET C R COILS ANNEALED 2B FIN 3 EDGE

CARRIER - LUKEHART TRUCKING, LLC

ATI FLAT ROLLED PRODUCTS DOES NOT USE MERCURY IN THE TESTING OR PRODUCTION OF ITS PRODUCTS.

EN 10204:2005 - 3.1 CERTIFICATE DOES NOT INDICATE PED APPROVAL FOR THIS MATERIAL.

THESE COMMODITIES OR TECHNOLOGY, WHEN EXPORTED FROM THE UNITED STATES, ARE IN ACCORDANCE WITH THE USA EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW IS PROHIBITED. U.S. LAW ALSO PROHIBITS DISPOSITION OF THESE COMMODITIES/TECHNICAL DATA TO ANY END-USER OR FOR ANY END-USE RELATED TO THE DESIGN, DEVELOPMENT, PRODUCTION, STOCKPILING, OR USE OF CHEMICAL, BIOLOGICAL, OR NUCLEAR WEAPONS, OR MISSILES, WITHOUT THE PROPER APPROVAL OF THE UNITED STATES GOVERNMENT.

MATERIAL IS OF USA MELT AND MANUFACTURE.

THE HARDNESS CONVERSION WAS PERFORMED USING EQUATIONS GIVEN IN ASTM E140 DEVELOPED FROM DATA IN TABLES 1, 2, 3, 5, AND 6. THE PARTICULAR EQUATION USED WAS BASED ON MATERIAL TYPE AND MEASURED HARDNESS SCALE. PER ASTM E140; THE CONVERSION VALUES ARE ONLY APPROXIMATE AND MAY BE INACCURATE FOR SPECIFIC APPLICATION.

THIS CERTIFIED MATERIAL TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL. FEDERAL LAW PROHIBITS THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE AND MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL LAW. ATI FRP HOLDS SEVERAL QUALITY CERTIFICATIONS THAT INCLUDE ISO-9001, AS9100, NADCAP, AND ISO/IEC 17025. MATERIAL WAS MANUFACTURED IN ACCORDANCE WITH THE ATI FRP QUALITY MANUAL REVISION 26 DATED 06/14/2017.

PAGE 02 - CONTINUED ON PAGE 03

11/27/17 15:01:12

CONSIGNEE-Please Note-This consignment was turned over to carrier in first class condition, being correctly loaded, at which time we assume responsibility for loss or damage in shipment unless, for your protection please reinspect shipment as it arrives. If any shortage or damage is discovered, have a full description made by transportation agent on receipt before signing.

WARNING  
Safety Data Sheets for this product are available on our website, [www.ATIfrp.com](http://www.ATIfrp.com). A thorough review of the Safety Data Sheet for the grade of material purchased shall be performed prior to working with this product and all safety & health considerations outlined must be implemented.

The above is a true copy of data on file. The material and test results conform to the sales contract and specification(s) as set forth in ATI Flat Rolled Products' Order Acknowledgement.

Norson DeFerrari  
Sr. Manager Quality, Concomite Quality Assurance

*Norson DeFerrari*



# VIRAJ PROFILES LIMITED

Works: SURVEY NO.- 25/1, 25/2, 26 & 34, Village- MAAN, Taluka- PALGHAR, Dist.- THANE, MAHARASHTRA- 401 506, INDIA, e-mail- [vickje@viraj.com](mailto:vickje@viraj.com)

## TEST CERTIFICATE

ORDER NO P004802  
PACKING LIST NO 64/1005939/15  
INSPECTION NO 100006688822  
DATE 23.05.2016

GRADE 304/304L  
HEAT No. 41257

BUNDLE NO : 1100508253

DESCRIPTION  
STAINLESS STEEL BRIGHT BARS

ROUGH & PEELD

SIZE 5 1/2"  
SHAPE ROUND  
TOLERANCE DIN 1013  
LENGTH 12'-14"  
PIECES 1  
WEIGHT 1,111.000 LB

## CHEMICAL ANALYSIS

%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Cu	%Mo	%Co	%N2
0.0170	1.070	0.360	0.0250	0.0350	18.170	8.070	0.550	0.340	0.150	0.08200

## TEST RESULTS

0.2% yield strength ksi	Tensile strength ksi	Elongation %	Reduction Of Area %	Hardness BHN	Grain Size NOS
40.0	84.0	60.0	71.0	170.0	5.0

## SPECIFICATION:

MATERIAL CONFORMS TO DIN EN 10088-3:2005; WNR 1.4301/A307 EN 10222-5 AND EN 10272 COND-A & ASTM A182/A-182M-15, ASTM A276/A276M-16 COND-A, A479/A479M-15 COND-A, A193/A193M-15 B8 CL-1, A320/A320M-11a B8 CL-1, A484 11, A388/A388M-05 ASME SA182-14, SA182-14, SA191-11 B8 CL-1, SA320-11 B8 CL-1, ASTM A314-2008, IGC SATISFACTORY AS PER ASTM A 262-10 PRACTICE E, AMS 5639H /AMS5647 (EXCEPT MARKING), QQ-S-763F, NACE MR0103-2012/NACE-MR0175/ISO-15156-2013, SAE-AIS-5-7720A, MIL-S-462-B, AISI 304/304L & UNSM30400/UNS30403, CERTIFICATION AS PER EN 10204-3.1.

## REMARKS

MATERIAL IS FREE FROM MERCURY CONTAMINATION, FREE FROM WELD OR WELD REPAIRS, MICRO-FREE FROM CONTINUOUS CARBIDE NETWORK ON GRAIN BOUNDARIES, MACRO-GOOD, MINIMUM SOLUTION ANNEALING TEMPERATURE 1050C, SOAKING TIME 02 HRS, WATER QUENCHED, MELT SOURCE: ADD. WE CONFIRM THAT THE MATERIAL HAS BEEN TESTED AND FOUND TO BE FREE FROM RADIOACTIVE CONTAMINATION, COUNTRY OF ORIGIN: INDIA.

We hereby certify that the material described above has been tested and complies with the terms of order/contract.

WORKS INSPECTOR  
K R K MURTHY

4013908

CO T 5982  
BART





# Material Test Report

**SAARIS LLC**

7953 Washington Woods Dr.,  
Dayton, OH 45459

Phone: (937) 573-4875 Fax: (702) 928-4126

Ref No: 104702

Date 5/07/2016 MTR No. 0000056726

TEST CERTIFICATE ACC TO DIN 50049 3.1 B/EN: 10204: 3.1

Part Number: 87-15955-10

PO Number: 87-15955

Description: A513T5-14; SRA; DOM; Grade=1020; Category=CARBON WELDED; Round; OD=0.625"; ID=0.435"; (WT=0.095); Deburred; Length=240" to 288"

Product: TUBE

Heat No: 15D2317

Steel Grade: 1020

Ends: Deburred

DIMENSIONS		TOLERANCE	
MM	IN	MM	IN
OD	15.875	0.625	0.0050
ID	11.049	0.435	0.0050
WT	2.413	0.095	0.0000

QUANTITY		WEIGHT TON	
NUMBER	METER / FT	NUMBER	WEIGHT TON
4	6.351422	20.898.000	5.600
6,098.000 - 7,315.200 MM		240.000 - 288.000 IN	

## CHEMICAL ANALYSIS

ELEMENTS	UM	MIN	MAX	MILL	PRODUCT
Carbon (C)	%	0.1800	0.2300	0.2040	
Manganese (Mn)	%	0.3000	0.6000	0.4190	
Silicon (Si)	%	0.110	0.350	0.110	
Aluminum (AL)	%	0.0350	0.090	0.0350	
Phosphorus (P)	%	0.0350	0.090	0.0350	
Sulfur (S)	%	0.0350	0.090	0.0350	
Chromium (Cr)	%	0.0350	0.090	0.0350	
Nickel (Ni)	%	0.0350	0.090	0.0350	
Molybdenum (Mo)	%	0.0350	0.090	0.0350	
Vanadium (V)	%	0.0350	0.090	0.0350	
Copper (Cu)	%	0.0350	0.090	0.0350	
Columbium (Cb)	%	0.0350	0.090	0.0350	
Calcium (Ca)	%	0.0350	0.090	0.0350	
Titanium (Ti)	%	0.0350	0.090	0.0350	
Nitrogen (N)	%	0.0350	0.090	0.0350	
Boron (B)	%	0.0350	0.090	0.0350	
Zirconium (Zr)	%	0.0350	0.090	0.0350	
Antimony (Sb)	%	0.0350	0.090	0.0350	
Tin (Sn)	%	0.0350	0.090	0.0350	

MECHANICAL PROPERTIES		HARDNESS	
Y.S	U.T.S	% E	HRB
MIN	55,000	65,000	10.00
MAX	71,480	81,600	20.00
PROD	71,480	81,600	83.00

100% EDDY CURRENT TESTING- E309		FLATTENING TEST	
STRAIGHTNESS		FLARING TEST	
PASSED		15% OF ID PASSED	
PASSED		2/3% OF OD 1/3% OF OD PASSED	
PASSED		PASSED (1/1000 MM)	

Remarks:

Melted in: INDIA

Produced in: INDIA

Product is free of weld repair and has not come in contact with Mercury or any of its components.

We hereby Certify that the material described above conforms to Specification and Purchase Order.

Bill Johnston

Quality Co-ordinator

Any questions, Please email: TestReports@saaris-llc.com


TUN 58045

#6763

01.75982


SAARIS

# TPI Work Test Certificate



**INDIA**

**TUBE INVESTMENTS OF INDIA**  
**TUBE PRODUCTS OF INDIA - MODULE - I**  
 POST BOX NO.4 & 18, M.T.H. ROAD, AVADI, CHENNAI - 600054



**MURUGAPPA**

<p>TC No : FAE/BCI618749              Date : 31-JAN-16              Invoice No : 4421889573              Invoice Date : 29-JAN-16              Job / Batch No : RBCL1601415</p>	<p>Description : PRECISION STEEL TUBES - CDW              Condition : ASTM A513 / A513M-15 TS 1020              Bundle No's : 016000794, 016000793              SRA :              : /              : BCS23 / 06-JAN-16</p>
---	---

Customer Size / Condition / Quantity / Gross Weight / Tag Marking / WO. NO. / SPEC & GRADE / DESTINATION / BUNDLE NO. / COUNTRY OF ORIGIN. / P.O. NO. / TPI-ED / SIZE / SPEC / CONDITION / TAG MARKING / HEAT NO. / MADE IN INDIA.

Tube Marking : P. UOM : 750" OD x .560" ID x 0.095" WT x 20'-24" RL

Size : 750" OD x .560" ID x 0.095" WT x 20'-24" RL

Quantity in : 4250.591 Ft

**TABLE ANALYSIS :**

Process	Heat No.	%C	%Mn	%P	%S	%SI	%Al
Min	15102800	.18	.3				
Max		.23	.6	.035	.035	.011	.044
Obs		.185	.52	.005	.005	.005	.044

**RH Section Longitudinal Tensile Test at Room Temp**

Test	Heat No.	YS	TS	Elng.
Min	15102800	379	448	10
Max				
Obs		475.15	587.1	23

**Rock Well**

Hardness	75 HRB	82 HRB
Min		
Max		
Obs-Min	.752	
Obs-Max	.754	

**Dimensions in : Inches**

Spec	OD	ID	WT	Length
Min	.75	.555		240
Max	.755	.56		288
Obs-Min	.752	.556		240
Obs-Max	.754	.559		287.992

**Technological Tests :**

Test	Spec	Result
Cracking		-
Flaring		-
Flattening		-
Flanging		-
Rev. Flang.		-
Wing. Gang Len.		-

**Non-Destructive Tests :**

Test	Spec	Result
Hoopstress OD		-
Hoopstress ID		-
Strapstress	0.76/1000 MM MAX	-
Edgy Corros	100	-
Visual		-
Ultrasonic Test		-

This is to certify that the goods are supplied as per the purchase order and specification Requirements

Prepared by : K. GUVARAJAN  
 Quality Shift Incharge Signature:

For Tube Investments of India  
 Unit: Tube Products of India Module - I  
 Mgr-Quality-IBP-TP

#8163

AC7785

9163

TIME-1000170-V  
#6505

TPI Work Test Certificate

Test-1619  
49646



TUBE INVESTMENTS OF INDIA  
TUBE PRODUCTS OF INDIA - MODULE - I  
POST BOX NO.4 & 18, M T H ROAD, AVADI, CHENNAI - 600054

murugappa

Order No. : BC6903 /22-DEC-16  
Description : PRECISION STEEL TUBES - CDW  
Specification : ASTM A513/A513M-15 TS C1020  
Condition : SRA  
Bundle No's : 017000842  
Job /Batch No : RBCL1701331  
Invoice No : 4421810999  
Invoice Date : 31-JAN-17  
Date : 10-FEB-17  
TC No : PAE/BC1720318

Tube Marking : P. Uom  
Bundle Tagging :  
Customer Size /Condition /QUANTITY /GROSS WEIGHT /TAG MARKING / WO.NO. / SPEC &  
GRADE /DESTINATION / BUNDLE NO /COUNTRY OF ORIGIN.  
P.O.NO. /TPI-ED /SIZE /SPEC /CONDITION /TAG MARKING/ HEAT NO. /MADE IN INDIA.  
Size : 1.000" OD X 0.760" ID X 0.120" WT X 20'-24' RL

Quantity In : 1857.513 Ft

LADLE ANALYSIS :

Process	Heat No.	%C	%Mn	%P	%S	%SI	%Al
Obs	D37954	.19	.49	.008	.005	.023	.054
Max		.23	.6	.035	.035		
Min		.18	.3				

Full Section Longitudinal Tensile Test at Room Temp

Test	Heat No	Y.S	T.S	Elng
Min	379	448		10
Max				
Obs	D37954	MPA	MPA	%
		480.9	565.76	22

Rockwell

Hardness	OD	ID
75		
HRB		
H4		

Dimensions in : Inches

Spec	OD	ID	WT	Len
Min	1	.755		240
Max	1.005	.76		288
OBS-MIN	1.001	.757	0	267.283
OBS-MAX	1.003	.759	0	284.016

Non-Destructive Tests :

Test	Spec	Result
Straghtness	0.76/1000 MM MAX	0.30 / 1000
Eddy Current	100	100% TESTED OK
Visual		DEFECT FREE
Ultrasonic Test		

Technological Tests :

Test	Spec	Result
Crushing		
Flaring		
Flattening		
Flanging		
Revol. Flang.		
Elng. Gang Len		

This is to certify that the goods are supplied as per the purchase order and specification Requirements

Prepared by : *Hydram*  
Quality Shift Incharge Signature:  
Unit: Tube Investments of India Module - I

*J. Es*  
Mathavan M  
Mgr-Quality-IBP-TP







**CAN ART**  
ALUMINUM EXTRUSION I.P.

**Material Test Report**

Manifest: 709584

Ticket:

1698543

Our Order: 879031-1

Cust P.O.: 791663

Die: ES04038

Part: 160001442

Description: 1.250 x 2.000 RECT. BAR

Alloy Temper: 6061 T6511

Print Date: 6/22/17

Chemical Composition											
CastNum	Si	Fe	Cu	Mn	Mg	Cr	Zn	Al	OtherEach	OtherTotal	Maximum
3B5790	0.60	0.17	0.22	0.04	0.81	0.06	0.01	0.02	0.05	0.15	

Mechanical Properties						
Sample ID	Cast #	Lot #	Test Date	Ultimate Tensile	Yield	Elongation 2" gage length
71383	3B5790	A11	6/14/17	44.71	41.46	15.5

Applicable Specifications: ASTM B221-14  
AMS-QQ-A200/8A  
Country of Origin: ONTARIO, CANADA

Can Art Aluminum Extrusion Inc. certifies that materials shipped under this order have been inspected and tested in accordance with Aluminum Association and agreed upon customer specifications. Can Art assumes no liability for additional costs which may be incurred during the customer's manufacture and sale of its products, and is subject only to the replacement of any materials not within agreed upon specifications provided written notification is received by Can Art within 30 days from the date of shipment.

Eric Hottel - Tensile Testing

Authorized:

Even Eng. Quality Assurance Manager

*[Signature]*

FAL-1142-12

#2453

PO. 9353

48746

44-344-V

72A 1897

49102

# Test de dureté Rockwell Rockwell Hardness Test

LES ACIERS TRANSBEC (1997) LTEE.

4054 BOUL. LE CORBUSIER, #201

LAVAL, QC

H7L5R2

Adresse / Address :

Client / Customer :

# commande Sapa / Sapa order # : 7100203

# bon de commande / Purchase order # : OU-48345

# de matrice / Die # : MS 15954

Description : 4x3/4" FLAT BAR

Alliage & trempage / Alloy & temper : 6061 T6

Longueur / Length : 6096 mm

# Contrôle / Control # : 553-1

# Coulée / Cast # : 70740

Dureté Rockwell E /  
Rockwell E hardness : 94 HRE  
Min. requis /  
Min. required : 88 HRE

Max. permis /  
Max. permitted : 100 HRE

Composition chimique typique / Typical chemical composition :

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6063	0.20 - 0.60	0.35 Max	0.10 Max	0.10 Max	0.45 - 0.90	0.10 Max	0.10 Max	0.10 Max
6005	0.60 - 0.90	0.35 Max	0.10 Max	0.10 Max	0.40 - 0.60	0.10 Max	0.10 Max	0.10 Max
6005A	0.66 - 0.74	0.14 - 0.28	0.08 - 0.16	0.18 - 0.26	0.46 - 0.54	0.03 Max	0.05 Max	0.05 Max
6061	0.40 - 0.80	0.70 Max	0.15 - 0.40	0.15 Max	0.80 - 1.20	0.04 - 0.35	0.25 Max	0.15 Max
6351	0.7 - 1.3	0.5 Max	0.10 Max	0.40 - 0.80	0.40 - 0.80	—	0.20 Max	0.20 Max

Nous certifions que le matériel fourni rencontre les exigences chimiques telles qu'annoncées par la norme ASTM B-221-14 excepté pour la section 8.2 (nombre de spécimen).

We hereby certify that the material supplied meets the chemical properties as published by the ASTM B-221-14 except for section 8.2 (number of specimen).

Sincèrement vôtre,

date : 2017-11-09

Yours truly,

Daniel Alfredo Pelleiter  
Directeur Qualité  
Quality Director



**CERTIFICATO DI COLLAUDO**  
**ABNAHMEPRUEFZEUGNIS**  
**INSPECTION CERTIFICATE**  
**CERTIFICAT DE RECEPTION**  
**EN 10204 (2004), 3.1**



**Acciaierie**  
**Valbruna s.p.a.**

36100 VICENZA (Italia) - Viale della scienza, 25 Z.I.  
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4  
 Telephone number: 0039 (0) 444968211

Cliente / destinataire: VALBRUNA CANADA LTD  
 8724 HOLGATE CRESCENT  
 L5T 5Z1-MILTON, ONT L5T 5Z1-CA

Produttore: ACCIAIERIE VALBRUNA S.P.A.

Stato di fornitura: Hot rolled Descaled Annealed Hot rolled

Material is DFARS Compliant

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER

Avviso di Spediziona: D-VI14040056  
 L'interazione di Spediziona: B.L.

Ordine nr 411005038 Stock - Canada  
 Bis: off/on order/Commande

Tipo di Elaborazione: E+AOD  
 L'elaborazione di Spediziona: B.L.

Marchio di Fabbrica:  
 Zuerchen des Lieferanten  
 Signe de l'usine productrice  
 Puntezza del Collaudatore:  
 Stempel des Werksachverständigen  
 Inspector's stamp/signature



Controllo visivo e dimensionale: soddisfa le esigenze  
 Visual inspection and dimensional check: satisfactory

Controllo antiriscaldamento: OK  
 Vermeidung/Auswirkung: keine Beeinträchtigung  
 Controlle antiriscaldamento: OK

Sono state soddisfatte tutte le condizioni richieste  
 The material has been furnished in accordance with the requirements  
 Le conditions ont été satisfaites conformément aux exigences

Melted and manufactured in Italy No welding or weld repair Material free from Mercury contamination  
 The Quality Management System is Certified acc. Pressure Equipment Directive (97/23/EC) Annex 1, s. 4 by TÜV and LLOYD S  
 Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.  
 The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded at least, upon order of the Product by the Purchaser. Acciaierie Valbruna S.p.A. shall not be responsible for any improper use of the Products.

Q.C. Reviewed  
 5/8/02/27/15

Vicenza, 17/12/14 VC0008 (Mod. MCE2)	il collaudatore di stabilimento / der Werksachverständiger / Works inspector / L'agent d'usine M. Rizzotto Pagina - 2 di 2
--	--



Nr.: 89051448

**Inspection certificate - mill certificate**

Seite / page: 1 von / of 2  
Datum / date: 2017 05 29

Zertifiziert nach / certified to ISO 9001, ISO/TS 16949, EN/AS 9100, ISO 14001, NADCAP

Bestell Nr. / order no.: 5400341710-R01	Datum / date: 2017 02 23	Auftragsbest. Nr. / order confirm no.: 127031	Datum / date: 2017 02 24	Lieferschein Nr. / delivery note: 89051448	Datum / date: 2017 06 30	
--	-----------------------------	--	-----------------------------	---	-----------------------------	--

Produkt / product	Form / form: Sheet Werkstoff / material: 6061 Zustand / temper: T6 Dim. / dim.: [inch]: 0,050x48,00x144,00 Kundenartikel Nr. / cust. article no.: ALFLR01645
Bedingungen / terms	Technische Lieferbedingungen / techn. spec.: AMS-QQ-A-250/11 08.1997 ASTM B-209 - 14 AMS 4027N, 07.2008 ASME SB-209, 2011a Sondervorschrift / special terms:

AB-Pos.	ord.-Item.	BNR/Los	Teillos	Guss Nr.	Werkstoff	Kollo	Gewicht netto	Stk.
03	32115/01	33395/01	00	01/0082348/7	6061	1270310006	4001,323 lbs	119
03		33395/01	00	01/0083055/7	6061	1270310007	3977,072 lbs	119

Chemische Zusammensetzung ([%] Gewichtsanteile) / Chemical composition ([%] weight proportion (OES))												
Guss Nr. / cast no.		material										
01/0082348/7	6061	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	Others	Others Total
		0,40	-	0,15	-	0,80	0,04	-	-	-	-	-
		spec. min.										
		spec. max.										
01/0083055/7	6061	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	Others	Others Total
		0,40	-	0,15	-	0,80	0,04	-	-	-	-	-
		spec. min.										
		spec. max.										

Zugprüfung LT / tensile test LT									
BNr/Los	Zustand	Richtung	Tests	UTS	YS	A2"			
Lo/No.	temper	direction		[ksi]	[ksi]	[%]			
			spec.min.	42,0	35,0	10			
			spec.max.	-	-	-			
32115/01	T6	LT	2	from	45,8	35,5	17		
32115/01	T6	LT		to	46,0	35,8	17		

Ag 166V



Abnahmeprüfzeugnis 3.1 (EN 10204)  
Inspection certificate - mill certificate

Nr.: 89051448  
Rev.: 0

Seite / page: 2 von / of 2  
Datum / date: 2017 05 29

Zertifiziert nach / certified to ISO 9001, ISO/TS 16949, EN/AS 9100, ISO 14001, NADCAP

Zugprüfung LT / tensile test LT									
BNr/Los	Zustand	Richtung	Tests	UTS	YS	A2"			
LoVNo.	temper	direction		[ksi]	[ksi]	[%]			
			spec.min.	42,0	35,0	10			
			spec.max.	-	-	-			
33395/01	T6	LT	from	47,9	39,3	16			
33395/01	T6	LT	to	48,0	40,0	16			

Sonstige Prüfungen / other tests									
Biegeversuch: OK. / Transverse bend test OK.									
Markkontrolle: OK. / Dimensional Check: OK.									
Oberfläche: OK. / Surface inspection: OK.									

Bemerkungen / notes									
Gegossen und gefertigt in Österreich / Country of melt and manufactured in Austria									

Es wird bestätigt, dass die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellung entspricht.  
We hereby certify that the material described above has been tested and complies with the terms of the order contract.

Werkstoffverständiger / factory specialist									
E-Mail / e-mail									
Josef Klampfer									
Josef.Klampfer@amag.at									

Herstellerland: Österreich / goods origin: The goods are of Austrian origin.  
Maschinell erstellt - Gültig ohne Unterschrift / Automated - valid without being signed.

PAG 14V

149722

7/14-188

PHL-17-1000

#1042

# TEST CERTIFICATE



Hulamin Operations Proprietary Limited Reg Ho 18091020418007 VAT Reg No. 4570235022  
HEAD OFFICE: Moson Madshe Rd, Pictura-Libung 2201, P.O. Box 74, Pictura-Libung 2200, South Africa  
Telephone: +27 22 306 0011 Telex: +27 22 306 0035

Certificate No: 160810472

<b>BUYER:</b> EMPIRE RESOURCES INC 10th FLOOR PARKER PLAZA FORT LEE	
<b>Case No:</b> PDL71/PDL72	
<b>Shipping P/B No:</b> URS1226	<b>Lot No:</b> 0206/10003
<b>Release No:</b> RE160008	<b>Plate No:</b> 271002181
<b>Customer Order No:</b> 7856-P-R151782	<b>Combined Plate No:</b> R17724
<b>Item Part:</b> 1/1	<b>Customer Part No:</b> 100810472
<b>Product:</b> 250" X 48.5" X 0.6" PLATE 6061, T651	<b>Dimension:</b> 0.25" X 48.5" X 0.6"
<b>Alloy - Temper:</b> 6061 - T651	<b>Certificate No:</b> 100810472
<b>Combined Plate No:</b> R17724	<b>Customer Part No:</b> 100810472

## MECHANICAL TEST RESULTS

Lot No.	Cast No.	Metals Id	Alloy	Spec No	Yield Strength (ksi)	UTS (ksi)	Elongation (in)	Elongation (%)	Tensile Test	Gauge Length (inches)	Gauge Band Test	Actual Gauge Band Test
0206/10553	REM /ADP	16-394/2055	6061	1	42.0	48.4	14	14	2108/16	60	0.26	0.26
				2	42.0	48.4	14	14	2108/16	2	0.26	0.26

## CHEMICAL COMPOSITION

Cast No.	Alloy	Si (%)	P (%)	Cu (%)	Mn (%)	Mg (%)	Cr (%)	Zn (%)	Fe (%)	Each (%)	Total (%)	Al (%)
REM /ADP	6061	0.06	0.04	0.16	0.12	0.08	0.18	0.01	0.01	0.05	0.15	87.27

CONFORMS TO: ASSUE SUB-105 ASTM B209/1 ASSUE SUB-105 ASTM B209/1, 6061

For purposes of determining conformance with these specifications, the observed values shall be rounded to the nearest digit in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM Practice E29, for Using Significant Digits in Test Data to Determine Conformance with Specifications.

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND CONFORMS WITH THE TERMS OF THE ORDER CONTRACT, THE INSPECTION RESULTS INDICATED IN THE CHEMICAL COMPOSITION HAVE BEEN OBTAINED FROM CAST ANALYSIS.

17. Hulsmin - Read Product Technical Manual

Metal, cast, rolled and processed in South Africa - meets Requirements of R615 and R614

Printed Date: 23 Jun 1918 YW 250

# 3337 1202-38 V

49801  
3P

ARANA Y LUPARDO, 2  
48490 UGAO-MIRAVALLÉS/VIZCAYA (SPAIN)  
Tfno.: 946480211  
Fax: 946480128  
Email: calibrados@calibradospradera.es  
www.calibradospradera.es



# CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Máde according to:

EN 10204/DIN 50049

3.1

Nº CERTIFICADO / CERTIFICATE NR.: 49709

ALBARAN 49709	CLIENTE LES ACTERS TRANSBEC (1997) LTÉE	CUSTOMER
---------------	---	----------

Norma : EN 10277

Productos Colibrados de acero. Condiciones técnicas de suministro.

Bright steel products. Technical delivery conditions.

PRODUCTO SOLICITADO / PRODUCT ACCORDING ASTM A106

ITEM	DESCRIPTION	QTY	UNIT	WEIGHT	LENGTH	WIDTH	THICKNESS	TEMP.	TEST	RESULT
12.14	RED. ESTIRADO 63,50 (2 1/2")	1.094	-0,076	917091	63,50					
1018	RED. ESTIRADO 6,35 (1/4")	978	-0,051	917092	6,35					
1018	CUA. ESTIRADO 25,40 (1")	1.036	-0,130	916780	25,40					
1018	CUA. ESTIRADO 9,53 (3/8")	788	-0,090	915990	9,53					
1018	CUA. ESTIRADO 12,70 (1/2")	982	-0,110	916617	12,70					
1018	RED. ESTIRADO 9,53 (3/8")	2.072	-0,051	141111	9,53					
1018	RED. ESTIRADO 15,88 (5/8")	2.130	-0,051	141131	9,53					
1018	RED. ESTIRADO 19,05 (3/4")	1.020	-0,051	916940	15,88					
1018	RED. ESTIRADO 19,05 (3/4")	996	-0,051	916887	19,05					
1018	CUA. ESTIRADO 9,53 (3/8")	746	-0,090	915990	9,53					
1018	CUA. ESTIRADO 12,70 (1/2")	650	-0,090	916803	9,53					
1018	CUA. ESTIRADO 19,05 (3/4")	1.002	-0,130	915992	19,05					
1018	CUA. ESTIRADO 22,23 (7/8")	890	-0,130	915746	22,23					
1018	CUA. ESTIRADO 25,40 (1")	1.034	-0,130	916780	25,40					
1018	CUA. ESTIRADO 44,45 (1 3/4")	992	-0,160	916031	44,45					
1018	CUA. ESTIRADO 50,80 (2")	1.194	-0,190	916736	50,80					
1018	CUA. ESTIRADO 50,80 (2")	980	-0,130	916780	25,40					
12.14	RED. ESTIRADO 38,10 (1 1/2")	1.194	-0,190	916602	38,10					
1018	CUA. ESTIRADO 12,70 (1/2")	990	-0,110	916617	12,70					

Composición química de la solda / Chemical Analysis of Heal

MEDIDA	OF	COLANA	Cost. M.	C	Cr	Co	Mn	Mo	N	NI	P	TP	S	SI
63,50	0,00	917091	42050 AG	0,080	0,055	0,011	1,110	0,007	0,000	0,022	0,063	0,310	0,310	0,004
6,35	0,00	917092	41480 GM	0,160	0,000	0,000	0,750	0,000	0,000	0,000	0,021	0,000	0,032	0,160
25,40	0,00	916780	41544 C	0,160	0,000	0,000	0,720	0,000	0,000	0,000	0,016	0,000	0,023	0,160
9,53	0,00	915990	40828 G	0,150	0,000	0,198	0,760	0,000	0,000	0,000	0,016	0,000	0,033	0,242
12,70	0,00	916617	41450	0,150	0,000	0,000	0,769	0,000	0,000	0,000	0,015	0,000	0,009	0,194
19,05	0,00	915992	40080 S	0,165	0,000	0,000	0,780	0,000	0,000	0,000	0,009	0,000	0,024	0,274
22,23	0,00	915746	40587 C	0,150	0,000	0,000	0,600	0,000	0,000	0,000	0,017	0,000	0,020	0,160
25,40	0,00	916780	41544 C	0,160	0,000	0,000	0,720	0,000	0,000	0,000	0,016	0,000	0,023	0,160
44,45	0,00	916031	40716	0,200	0,000	0,000	0,800	0,000	0,000	0,000	0,020	0,000	0,018	0,190
50,80	0,00	916736	41336 C	0,150	0,000	0,000	0,710	0,000	0,000	0,000	0,012	0,000	0,012	0,160



**CERTIFICADO DE CALIDAD/QUALITY REPORT**

De acuerdo a Afade according to

EN 10204/DIN 50049

### 3.1

ALBARAN	49709	CIENTE LBS ACIFERS TRANSPARENT (1997) LTB	CUSTOMER
---------	-------	---	----------

NOTES: EN 10177

Productos Calibrados de acero. Condiciones técnicas de suministro.

NAME

Brghl steel product, technical delivery conditions.

75.40	0.00	916780	41544 C	0.160	0.000	0.000	0.000	0.220	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.023	0.160
50.80	0.00	916736	41336 C	0.150	0.000	0.000	0.000	0.210	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.160
38.10	0.00	916602	41374 IS	0.070	0.000	0.000	0.000	1.120	0.000	0.000	0.000	0.000	0.000	0.043	0.000	0.000	0.295	0.010
12.70	0.00	916617	41450	0.150	0.000	0.000	0.000	0.769	0.000	0.000	0.000	0.000	0.000	0.015	0.000	0.000	0.009	0.194

Copyright Clearance Center / www.copyright.com

MEDIDA	OR	COST NR.	COLADA	Refractio Tens. strength	Limit elastic Yield point 0.2% Minumz	Alargamiento Rlongation Lo=50 mm.	Dureza HB	Extraction %
63.50	917091	42050 AD	504.00		456.70	15.66	185.00	0.00
6.35	917092	41480 GM	678.70		634.90	7.76	190.00	64.75
25.40	916780	41544 C	612.35		583.92	28.20	169.00	0.00
9.53	915990	40828 G	783.23		761.48	10.92	247.00	0.00
12.70	916617	41450	806.20		550.30	15.40	185.00	61.50
9.53	916617	41776 GM	592.90		531.30	18.50	172.00	66.45
9.53	141131	41776 GM	592.90		531.30	18.50	172.00	66.45
15.88	916940	41731 AA	627.37		504.90	19.38	180.00	58.58
19.05	916887	41645 G	647.30		621.09	15.64	195.00	56.94
9.53	915990	40828 G	783.23		761.48	10.92	247.00	0.00
12.70	916617	41450	806.20		550.30	15.40	185.00	47.88
19.05	915992	40080 S	530.32		510.28	34.50	162.00	62.99
22.23	915746	40587 C	628.00		595.00	23.00	180.00	0.00
25.40	916780	41544 C	612.35		583.92	28.20	169.00	0.00
44.65	916031	40716	513.00		324.00	32.10	0.00	0.00
50.80	916736	41336 C	515.00		330.00	34.00	0.00	0.00
25.40	916780	41544 C	612.35		583.92	28.20	169.00	0.00
50.80	916736	41336 C	515.00		330.00	34.00	0.00	0.00
38.10	916617	41374 TS	0.00		550.30	0.00	151.00	0.00
12.70	916617	41450	806.20		550.30	15.40	185.00	61.50

**Callad Supertek**

DESCRIPCIÓN	OR	Clase
1214 RPD, ESTIMADO 63,50 (2,12%)	917091	EN 10277-1
1018 RPD, ESTIMADO 6,35 (1,14%)	917092	
1018 RPD, ESTIMADO 9,53 (3,87%)	141111	
1018 RPD, ESTIMADO 9,53 (3,87%)	141131	
1018 RPD, ESTIMADO 15,88 (5,87%)	916940	
1018 RPD, ESTIMADO 19,05 (3,47%)	916887	
1214 RPD, ESTIMADO 38,10 (1,12%)	916602	

ALBAÑA Y LUPARDO, 2  
48490 UGAO-MIRAVALLAS/VIZCAYA (SPAIN)  
Tfno.: 946480211  
Fax: 946480128  
Email: calpradera@calibradospredens.es  
www.calibradospredens.es



## CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Inlde according to:

EN 10204/DIN 50049

3.1

ALBAÑA 49709	CLIENTE LRS ACIERAS TRANSURC (1997) LTDE
Delivery Note N°.	CUSTOMER

Nº CERTIFICADO / CERTIFICATE NR.: 49709

Norma : EN 10277 Productos Calibrados de acero. Condiciones técnicas de suministro.

Norm : Bright steel products. Technical delivery conditions.

Observaciones: BARRAS DE ACERO ESTIRADAS EN FRÍO SIN ALAR

DEPARTAMENTO DE CALIDAD: Certifica que el mencionado producto cumple con las especificaciones del pedido.

QUALITY DEPARTMENT: Certify that the product fulfills the order specifications.

Firmado: Susana Fernández  
Directora de Calidad

Fecha/Date: 20/11/2017

**CALIBRADOS PRADERA, S.A.**



Sistema de  
Gestión  
ISO 9001:2008  
Licencia de  
ID: 140000004



5/18/18

47865

**CERTIFICADO DE CALIDAD/QUALITY REPORT**

### 3.1

Norm:

801474108

Composición química de la colada / *Chemical Analysis of Heat*

Camelot's mechanical / Mechanical properties



ARANA Y LUPARDO, 2  
48490 UGAO-MIRAVALES/VIZCAYA (SPAIN)  
Tfno.: 946480211  
Fax: 946480128  
Email: calibrados@calibradospradera.es  
www.calibradospradera.es

## CERTIFICADO DE CALIDAD/QUALITY REPORT

De acuerdo a /Made according to:

EN 10204/DIN 50049

3.1

ALBARAN 46579	DELIVERY Note Nr.
CLIENTE LES ACIERS TRANSBEC (1997) LTRE	CUSTOMER

Nº CERTIFICADO / CERTIFICATE NR.: 46579

Norma : EN 10277  
Productos Calibrados de acero. Condiciones técnicas de suministro.  
Bright steel products. Technical delivery conditions.

MEJORA	OF	COLADA	Restricción Tens. strength N/mm <sup>2</sup>	Lim. elástico Yield point N/mm <sup>2</sup>	Alargamiento Elongation Lo=50 mm.	Dureza HB	Dureza HB Hardness	Resistencia %
15,88	915991	40639 S	585,04	539,10	15,16	180,00	56,61	
19,05	915840	40080 S	530,32	510,28	34,50	162,00	62,99	
9,53	915990	40828 G	783,23	761,48	10,92	247,00	0,00	
9,53	915557	39825 GM	713,60	684,30	11,10	205,00	60,63	
31,75	915907	39680 W	533,38	523,05	12,04	169,00	45,79	
22,23	202246	40879 G	556,53	537,21	20,08	172,00	47,29	
31,75	202281	40941 G	554,30	542,90	19,26	172,00	41,62	
41,28	137984	40229 IS	558,50	543,30	11,12	190,00	0,00	
44,45	135807	40237 IS	538,50	503,50	15,30	195,00	0,00	
69,85	915816	40561 IS	488,20	469,60	22,10	180,00	0,00	
25,40	138229	41198 G	566,93	548,05	26,50	172,00	54,84	
22,23	916091	40717 G	625,03	599,51	24,20	185,00	55,97	
25,40	138494	41198 G	566,93	548,05	26,50	172,00	54,84	
25,40	138523	41198 G	566,93	548,05	26,50	172,00	54,84	
25,40	138623	41198 G	566,93	548,05	26,50	172,00	54,84	

Calidad Superficial

DESCRIPCION	Clase	EN 10277-1
1018 RED. ESTIRADO 9,53 (3/8")	OF	915557
12L14 HEX. ESTIRADO 31,75 (1 1/4")	1	915907
12L14 RED. ESTIRADO 22,23 (7/8")	3	202246
12L14 RED. ESTIRADO 31,75 (1 1/4")	3	202281
12L14 RED. ESTIRADO 41,28 (1 5/8")	2	137984
12L14 RED. ESTIRADO 44,45 (1 3/4")	2	135807
12L14 RED. ESTIRADO 69,85 (2 3/4")	1	915816
1018 RED. ESTIRADO 22,23 (7/8")	2	916091

Observaciones: BARRAS DE ACERO ESTIRADAS EN FRIO SIN ALEAR

DEPARTAMENTO DE CALIDAD: Certifica que el mencionado producto cumple con las especificaciones del pedido.  
QUALITY DEPARTMENT: Certify that the product fulfills the order specifications.  
Firmado: Susana Fernández  
Directora de Calidad  
Fecha/Date: 24/03/2017

